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Price Rise : A Challenge

The greatest and challenging problem of our economy is the galloping rise in prices. And there is a sense of helplessness in this advance. Some economists, Indian in particular, have raised their voice high to ventilate that the price rise is the result of the capitalist base of our economy. Imperative planning in such a base is basically wrong and indicative planning is bound to take a zigzag path, more so if the people are pitched up to the plane of a false developed democracy and the leaders catch up a sense of exclusiveness. They point to the communist countries which in their opinion, following the Leninized Marxist economy, have done away with all the capitalist nuisances in a successful attempt to make a "socialist man", who is dedicated to the services of his fellow brothers as a matter of logical process due to changed economic relations.

This is obvious. For what else can one think when one has nothing new to evolve ? One like such can only shift allegiance from one frustrating point to another. It is now more than established that the Leninised-Marxist economy, within half a century, feels exhausted to give a continuous lead to a self-sustained growth as is evidenced by the conflicts of the respective claims on the economic wheels of the "material inducements" and the creation of a "socialist man." These have been reflected in the socalled economic reforms in Russia and in other communist countries. It is wrong to give much credence to China's economy where the class-struggle is made to work for toppling down the old superstructure through "revolutionary violence" without any clear vision of the next superstructure. In all likelihood China will go the Russian way, much in a nationalist warmth, when the excitement of violence and the props and the pattern of the war economy to which she is tagged will calm down. If growth is the only indicator of economic development then what any communist country has attained in a regimented economy is far less than the performances of Germany under Hitler. And how far the creation of a "socialist man" is complete may be tested at any moment by a slight relaxation of the hands of regimentation in the social life of a communist country.

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The theorists diagnose the causes of the price rise in their own ways. One opinion is that it is the phenomenon of demand-pull, another the cost-push ; still another, both demand-pull and cost-push ; still further, it is simply a monetary phenomenon. So come the traditional prescriptions of restraints—monetary and fiscal—and respite by the application of controls and rationing, each of which has limited strength even in developed economies for which they have been found. A pragmatist however finds in the nature of India's price rise the hands of "excesses"—the excesses of deficit financing to step up investment without having sufficient support of food articles and raw materials ; excesses of "democracy" that has endless limit of toleration of the "freedom" to earn, spend and act ; excesses of the pressure of wage increase to live with the rising cost-of-living and not with the level of general productivity or under the auspices of national wage policy ; excesses of the employers in raising prices to over-feed the rises in costs that is to make the excess profits ; and, the excesses of the government to provide money to sustain the continuous rise in prices for the assumed social responsibility of driving the economy to full employment.

Many had thought that the public sector would be free from these excesses. For it represents the much craved for socialist sector where a "socialist worker" will be offing. But now the commonmen look with horror at the excesses of the men in public sector. The capitalist-divested management is accountable for its performance to Mr. Democracy ; and the socialist workers, least worked and best paid, are master-minded only in campaigning for further wage rise, no matter that it means : "Workers of the country, disunite !"

Economic fluctuations are a problem but never a death-knell to a developed capitalist economy. For it has a built-in economic resistance and a national character. Its growth is assured by its inherent characteristics. The economic resistance, national character and the inherent capitalist characteristics have been built up over generations, through trials and errors, peaks and troughs, by stages and under different favourable conditions. We have no such history, no such national character. We cannot wait to be wiped out by economic storms (which are mere fluctuations to a developed capitalist economy) nor should we desire for such a social system which has all but not the social equality ; where social justice is the by-product of machine and not the driving determinant force of the society.

Thus, a new social structure is needed—a patriotic structure—which will inspire each to work to the height of his ability to share the social pride and national opulence equitably. We have now before us two opposite acutely tested world economies and social systems. Both have antitheses. We can strike a synthesis suitably adapted in our immortal cultural and spiritual heritages. Anything short of this will be a false exercise for resolving the social and economic contradictions.

A Bias in the Secular Terms of Trade of Developed Nations

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In his usual lucid way kindlebrger has succinctly analyzed and summarized the problem of trade and development for Less Developed Countries. Those countries, at least until recently, have expected that trade would contribute little to their economic development for two reasons : one, the world environment that results in the secular terms of trade turning against those countries, and, two, conditions in the Less Developed Countries that center about their inability to transform. As a result many of those countries have adopted import substitution policies that may have resulted in a serious misallocation of resources. These conditions and arguments have been discussed in a voluminous literature.[1]

It is the purpose of this paper to question the policy of almost indiscriminate import substitution by the Less Developed Countries although the "actual" figures may show declining secular terms of trade for them because of the changing composition of that trade.

Herein is presented the thesis that one of the factors affecting the secular terms of trade between industrial and underdeveloped nations is that underdeveloped countries are systematically shifting their demand for the industrial countries' exports to those of a more processed nature. This factor is not the only determinant of the trend of the secular terms of trade between the two types of countries but has an importance aside from this fact in that it imparts a systematic bias to the export price indexes of the industrial nations, and, therefore, the import price indexes of underdeveloped nations. This facet of the problem is the principal concern of this paper. The result for the secular terms of trade between the two types of countries is that extant data appear too favorable to the industrial countries and too unfavorable to the underdeveloped countries regardless of the direction of changes in secular terms of trade.

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The authors of the United Nations study, *Relative Prices of Exports and Imports*, consider that the problem of composition is an important limitation to the blind acceptance of statistics purporting to show the trend of the terms of trade.[2] In fact, those writers believe that the problem of composition is more important for the statistics of manufactured articles than for primary products.[3]

A possible effect of compositional shifts on price indexes is illustrated by the quotation below :

> The possibility that changes in composition affect the unit value index depend in the first place upon the homogenity of the particular item in the group under consideration. Thus, for example, steel shapes and forms, reported in value and tonnage, comprise products in somewhat different degrees of fabrication. There is, therefore, a different order of value per ton for different shapes and forms included in the total. If, then, that one type of the product increases in proportion to the total and another declines, the unit value index would reflect that change even if prices remained constant ; and if prices changed, the change in composition would offset or exaggerate the actual price change.[4]

If there is a persistent shift in product composition to those products which are more costly, the price series will have an upward bias and that bias will be more pronounced the broader the commodity classification or definition.

Even with the most minute classification of foreign trade by the most statistically advanced nations, such classification would not serve for purposes of buying and selling of the products in the market place.[5] In other words, the purchases and sales of products require a more specific definition than is given by commodity classification in trade statistics. Consequently there can be all sorts of changes in composition within the commodity classification which are difficult to sort out and which may lead to erroneous data as to price and volume.

The use of unit values as a basis of a price index instead of price quotations is much more vulnerable to effects of shifts in composition. Yet the use of price quotations as a basis does not eliminate the problem since the definition of the various products will not be so precise as to eliminate shifts of composition within that definition. It can be seen that the major problem is one of definition of the products in using the method of price quotation and the definition of classifications of products in using unit values.

According to Allen one would expect that a country would shift its purchases of exports to lower priced articles when the prices of certain export commodities rise.[6] This would be so if that country found the lower priced articles have a high elasticity at substitution for those articles which have risen relatively in price. But it is possible that a country will want to focus its purchases on articles which are of a higher cost (price) regardless of the price behavior of the formerly imported articles. Granted that if two articles are of substantially the same nature and perform substantially the same function it is likely that a country will shift its purchases from the articles advancing relatively in price. It is likely that another factor is even more important for secular analysis since the above phenomenon is likely to be of a shortrun or cyclical nature.

The question to be asked here is : Are there reasons to expect that the composition of products demanded by the underdeveloped nations changes as time passes ?

First of all, to illustrate the idea most clearly, if a country produces and exports the *same* commodities in the *same* proportions and in the *same* amounts (i.e. a perfectly inelastic demand) now as in the historical past, using orthodox supply-demand analysis, one would expect the prices of these articles to depend upon the efficacy of the supply factors in that country to determine its long-run export prices.

The situation is far different when a country which imports those commodities is dissatisfied with the *proportions* of those same commodities imported. In that case, with the *same* total demand (in monetary amounts) for the same commodities but in different proportions it is possible for the importing country to raise or lower the export price index of the exporting country. Hence, export prices will not only depend upon the *internal* conditions of supply in the the exporting country but also on the changing composition of demand of the importing country as it affects those conditions of supply. In this case if the exporting country is willing and able to furnish the same commodities in the proportions as before, it is no fault of that country if the importing country changes its demand so that the exporting country can furnish the goods desired only at higher prices. In other words, the importing country has deliberately chosen to buy higher priced articles and, therefore, to change the composition of the products traded. This will result in an increase in the price index of the total group of commodities exported.[7] From the above example it can be seen that one must consider more than the effects that economic forces in one country have on the export prices and export volume of that country. Hence, the terms of trade may change unfavorably for a country due solely to its own insistent demand. This very error is sometimes committed in the explanation of the secular terms of trade, especially by those writers who seek to explain the movement in the terms of trade soley by the institutional make-up of different countries.[8]

Essentially, the problem of allowing for the changing composition of international trade as it affects the trade statistics is the same as that arising from quality changes—namely that it is due to the imperfection of definitions and classifications of commodities.[9] If it were not for this imperfection in definition and classification, the effects of compositional changes among the same group of commodities could be accurately measured. Since data are not available which are in an acceptable form for the testing of the thesis that there is a systematic bias in price indexes of commodities internationally traded, this will have to be done by logical inference. That is, an attempt is made to demonstrate that there is a systematic shift in the demand of underdeveloped nations to the more highly processed products of the industrial nations. It is one of the characteristics of developing economies that they desire and need, as they progress, more highly developed and shophisticated forms of every commodity for that is, in one sense, the very essence of development. Further, it must be conceded, that goods can be more processed only at some real cost to the processor that must be reflected in a higher price. As noted above this would pose no problem of statistical measurement if the commodities were defined and classified so precisely that there was no shift of composition *within* that classification. *But it is impossible to define so precisely.* If there is a shift in the composition among commodities to those which are more processed, it obviously follows that there must also have been a shift *within* those commodity classifications.

The thesis will be presented here that there is a *systematic* shifting of the composition of manufacturing countries' exports to exports of a different product classification of a higher cost (price) due to changed demand by underdeveloped nations. Since products cannot be classified *perfectly* this means that there would also by a systematic shift to higher cost (priced) commodities within each commodity classification. Hence, a demonstration which shows a tendency for such a shift *within* commodity classification. This means that there is a systematic bias in their export prices which tends to show them, overtime, as too "favorable" to the developed nations and too "unfavorable" to the less developed nations.[10]

The causal factors responsible for the above phenomenon may conveniently be divided into three categories which may be so inclusive as to demonstrate the thesis. These three factors may be designated as the "industrialization effect", the "demonstration effect", and the "income effect". Or, one may attribute the increase in real income, and therefore, the income effect to the results of industrialization since it makes little difference to the analysis.

As to the effect of industrialization, it is common knowledge that developing nations first attempt to manufacture for themselves those articles which are of relatively simple manufacture in order to fit the relatively undeveloped skill of their economy. Perhaps the classic example of this process would be the fact that most underdeveloped nations appear to have established cloth manufacturing as one of the first industries.[11] The reasons are obvious and well known but what are the results for the export trade of the manufacturing nations? For one thing, Robertson was correct when he equated the trouble that the Lancashire mills were experiencing with the development of like industries in the underdeveloped regions of the world.[12] But the results for the British terms of trade are not as black as Robertson believed, the reason being that the underdeveloped nations were now producing domestically, and spending their own currency for one of the "necessities" of life—cloth. Thus, there was no need to spend foreign exchange for that item. The foreign exchange *could* now be used to purchase equipment which would further the development of the country—capital goods—instead of one of the basic consumer "necessities"—cloth.[13] The nations hoping to industrialize try to duplicate the machine civilization of the more advance nations with the results that they are increasingly demanding from the industrial countries those products which will help them industrialize. The result is a shift in the composition within commodity classifications of manufactured exports to those of higher unit price, in turn, as the underdeveloped nations advance, there is a systematic upward bias in the export price figures of the manufacturing nations.

Chilean industrial development is a good example of the way that the development of a certain industry changes the composition of its imports. Chile had installed about 47 per cent of its weaving capacity and about 72 per cent of its spinning capacity in a ten year period since 1938.[14] The result is striking:

> Its vigorous development (cotton industry) in ten years has enabled domestic production to replace imports almost entirely, though in 1938 the latter supplied 60 per cent of total consumption.[15]

One can also note the same effect as it applies to Mexico after the textile industry was established in the first quarter of this century. Textile and textile manufactures imports as a percentage of total imports fell from approximately 23 per cent to about 5 per cent,[16] and in fact, Mexico has now been a net exporter of textiles for many years.[17]

The fact that there is a tendency for foreign demand for manufactures to shift to the higher priced products has been noticed by many writers. Beveridge was among the first, if not the first, to recognize this trend.[18] Lewis not only noticed this factor but also attributed it to the fact that underdeveloped nations were industrializing, as the following quotation illustrates :

> In any case, the trade in manufactures will change in nature : trade will shift away from the simpler consumer goods, which the new countries will be making for themselves, to heavy industrial products, to goods that can only be made cheaply on a large scale, and to products of expert craftsmanship.[19]

Baldwin explains part of the movement in the terms of trade between underdeveloped and developed nations as being due to the fact that as real per capita incomes in a country rise, there is a relative shift in the composition of the goods desired.[20] This relative shift, Baldwin believes, is from such goods as food and clothing to goods which are more typical of an industrial nation. The statistics that Baldwin quotes to substantiate his assertion are those for the United States and Great Britain ; but he notes that there is no reason to suspect that the same sort of process is not going on in the less developed nations.[21]

As an example of the way what the consumption of agricultural products decreases relatively to the consumption of other goods as real income rises, Schultz's data will suffice. According to Schultz the per cent of real income spent on farm products in the United States steadily declined from about thirty-five per cent in 1870 to approximately twelve per cent in 1939.[22]

Mexican imports by tariff groupings from 1893-4 to 1947 demonstrate that products which are more highly processed form an increasingly larger share of total goods imported. The tariff grouping which includes machinery, vehicles and parts, the most highly processed of tariff groupings, was approximately twelve to thirteen per cent of total imports by value for the earlier years and steadily increased throughout the years so that by 1947 that group was 45.5 per cent of the total of all imports.[23]

Hence, the results of a rising per capita real national income should be a shift in the composition of the goods demanded in the direction of a demand for products which are more highly processed and, therefore, are of a higher value per unit.[24] The result for the export statistics of an industrial nation and the import prices indexes of the less developed nations should then be that there would be a systematic bias which would tend to make those indexes rise faster than is really the case. This same bias was found to exist in the case of the shift in composition in goods internationally traded due to the "industrialization effect."

The application of the concept of emulation as it affects consumption patterns internationally was considered by Ragnar Nurkse as another factor making for the shift in the composition of imports of underdeveloped nations toward more "industrial" goods.[25]

The crux of the theory as presented by Nurkse is that the demonstration of the possibilities of the consumption of many and varied goods by the industrial nations leads to imitation by the underdeveloped nations[26]—the result being that consumption patterns as between the developed and the underdeveloped nations are interrelated in a direct way.[27] As Nurkse notes, "The American standard of living enjoys considerable prestige."[28]

Nurkse believes the strength of the demonstration effect to be due to two factors :

> The intensity of the attraction exercised by the consumption standards of the economically advanced countries—the demonstration effect on the international plane—is determined by two factors. One is the size of the disparities in real income and consumption levels. The other is the extent of people's awareness of them.[29]

Because of the new, quick, and efficient methods of communications, there is an increasing awareness of the advanced standard of living of the industrially advanced nations by the less advanced nations.[30] Further, according to the United Nations there is a larger absolute and relative gap in the incomes and per capita incomes of the two types of countries which contributes to a heightened effect.[31] In particular, Nurkse, states that the demonstration effect is specifically applicable to most Latin American countries.[32] Thus, one would expect this effect to contribute to a systematic shift toward the more industrially processed products in the composition of the imports of the underdeveloped nations.

The demonstration effect as postulated by Nurkse in not necessarily dependent upon rising incomes and industrialization of the underdeveloped nations since becoming aware of and emulating "higher" consumptions patterns is sufficient. Therefore, it is another factor to be considered in addition to the two effects noted above.

From the above analysis it can be seen that there are possibly three factors at work which cause a shift in the composition of the imports of an underdeveloped nation to products more processed in nature that would result in an upward statistical bias in the export prices of industrial nations.

As an illustration of the manner in which price indexes may be biased upward Baldwin estimates that if the cost of shipping is allowed for in the British terms of trade, the "improvement" from 1869 to 1913 of some 16 per cent would instead be reduced to an improvement of only 2 per cent as a "conservative" estimate.[33]

Hence. a small bias in British export prices due to changes in their composition as postulated above would entirely reverse the apparent trend in the secular terms of trade of Britain *and* the underdeveloped nations.

Uncorrected price series for quality changes may also impart an upward bias as noted in a study by Griliches concerning United States automobile prices where the automobile price index *rose* from 129.7 in 1954 to 144.3 in 1960 but if quality changes are taken into account the price index *fell* by 17.6 points.[34]

As an indication of the effect of compositional problems on price indexes Kindleberger notes in referring to German price indexes for manufactures of iron and steel, "...changes in weighting and coverage, while inportant, were limited in significance as compared with the question of homogeneity."[35] Kindlebeger shows the export price index for all German iron and steel manufactures when they are combined and when they are separated into three classes. The figure for the combined method for 1928 (base 1913) is 142.5 and the index for the same periods for the three commodities aggregated is 124.5 The figures, respectively, for 1938 (base year 1928) are 128.8 and 130.3.[36] In a British study of the behavior of export-import prices and volume for the period 1913-1923, the calculation is made that had the composition of exports not changed the index of British export prices would not have risen by 90 per cent but only by 80 per cent.[37]

Conclusions

It would seem there is sufficient evidence that the bias inherent in the export prices of industrial nations could be so large as to question not only the terms of trade figures but the "actual" secular *trend* of the terms of trade as between developed and less developed nations.

The importance of such a statistical bias in the industrial countries' export price indexes lies in their extensive use in constructing historical indexes of terms of trade for other countries with consequent distortions on which, or, about which, policy decisions are made. It has been customary for researchers to calculate the secular terms of trade of underdeveloped nations as being just the reverse of the more developed nations as revealed by the trade statistics of the more developed nations.[38] If one were to compute terms of trade over a significantly long period using less developed countries data their import price series would suffer from the same, or, greater limitations ascribed to export price data of the developed countries.

It would appear that basing policy decisions of a very serious nature on the apparent direction of the secular terms of trade is, indeed, precarious.

Foot Notes

1 Charles P. Kindleberger, 'International Economics', 5th ed., (Homewood : Richard D. Irwin, Inc., 1973), Chapter 5.

2 United Nations, 'Relative Prices of Exports and Imports', (Lake Success : Department of Economic Affairs, 1950), pp. 134-5.

3 Ibid.

4 Ibid. p. 135.

5 Ibid.

6 R.G.D. Allen, "Index Numbers of Volume and Price," 'International Trade Statistics", Eds. R.G.D. Allen and J. E. Ely, (New York : John Wiley and Sons, Inc., 1953), p. 195.

7 Sir William Beveridge, "Mr. Keynes' Evidence for Over-Population," 'Economica' (1924), 13 ; and United Nations, 'Relative Prices of Exports and Imports', pp. 135-6, for illustrations of this phenomenon.

8 Two such examples of this view would be H. W. Singer, "The Distribution of Gains Between Investing and Borrowing Countries", 'American Economic Review', XL (1950), 473-85; and Raul Prebisch, 'The Economic Development of Latin America and its Principal Problems', United Nations, Economic Commission for Latin America, (Lake Success : United Nations Department of Economic Affairs, 1950).

9 This, of course, omits consideration of the effects of new products on the compilation and accuracy of price indexes.

10 Hence, not only many a country by its own insistent demands turn the terms of trade aginst it but it, at the same time, may make them appear more unfavorable than is the case.

11 United Nations, Economic Commission for Latin America, 'Labor Productivity of the Cotton Textile Industry in Five Latin-American Countries', (Lake Success : Department of Economic Affairs, 1951), pp, 3-5.

12 D. H. Robertson, "A Word for the Devil," 'Economica' (1923), 206.

13 One does not have to assume Say's Law to demonstrate a compositional shift of the nature above since it is obvious that a country fulfilling its own demands for cloth will not buy more cloth. Thus, if cloth is eliminated from its imports this automatically changes the composition of its imports without the assumption that those expenditures will be used to purchase something else.

14 United Nations, Economic Commission for Latin America, 'Labor Productivity of the Cotton Textile Industry in Five Latin American Countries', p. 3.

15 Ibid.

16 Data for the fiscal years 1893-4 and 1894-5 based on data found in Mexico, 'Estadistica Fiscal Importacion' (Mexico, D.F. : Ministerio de Hacienda y Credito Publico, 1898) : for the years 1920 through 1925 from Mexico, 'Anuario Estadistico, I (Mexico, D.F. : Comercio Exteriory Navegacion, 1926), p. 113 ; for the years 1934 through 1939 from Mexico 'Anuario Estadistico' (Mexico, D.F. : n.p , 1939), p, 1173 ; and for the years 1945 through 1947 from Mexico, 'Anuario Estadistico del Comercio Exterior de los Estados Unidos Mexicanos', 1947 (Mexico, D.F. : Direccion General de Estadistica, 1948), p. 521.

17 United Nations, 'Yearbook of International Trade Statistics', 1969, pp. 569. 573.

18 Beveridge, op. cit., p. 13.

19 W. A. Lewis, 'Economic Survey, 1919-1939', (London: George Allen and Unwin, 1949), pp. 194-6.

20 R. E. Baldwin, "A Modificacao Secular das Relacoes de Troca," 'Revista Brasileiro de Economica', VI (1952), pp. 79-106.

21 'Ibid.' Also see Ragnar Nurkse, 'Problems of Capital Formation in Underdeveloped Countries', (London : Oxford University, 1953), p. 71, for a more direct explanation of the interrelationship of the consumption patterns of the industrial and underdeveolped nations.

22 T. W. Schultz, 'Agriculture in an Unstable Economy'. (New York: McGraw-Hill Book Company, 1945), pp. 63-4. Colin Clark, 'The Conditions of Economic Progress,' (London : Macmillan and Co., Ltd., 1940), pp. 446 has stated the situation differently but more to the point in observing that U. S. per capita consumption of agricultural products increased by 22 per cent between 1870 and 1930 while consumption of manufactured products increased by 350 per cent.

23 For sources, 'Supra', f. 14, above.

24 This point is further illustrated by data from William H. Shaw, 'Finished Commodities Since 1879', (Occasional Papers; New York : National Bureau of Economic Research, 1941), pp. 10, 12, which shows such a shift in the purchases of U. S. consumers during the period 1874-1939. Substantially the same information is found in William H. Shaw, 'Value of Commodity Output Since 1869' (New York: National Bureau of Economic Research, 1947), pp. 9, 13, 28.

25 Since national income statistics for a significant period of time are not available for underdeveloped nations, it is impossible to ascribe changes in their imports toward more highly processed industrial goods to either the "income" or "demonstration" effects, but, rather, to the undifferentiated effects of both. Consequently, the data used to illustrate the "income effect" also have to be used to illustrate the "demonstration effect." However, Kindleberger roughly assesses the effect of the foreign demonstration effect on export price indexes of some of the industrialized European countries and concludes that it is significant: C. P. Kindleberger, 'The Terms of Trade', (New York: The Technology Press of Massachusetts Institute of Technology and John Wiley and Sons, Inc., 1956), pp. 198-200.

26 Nurkse, op. cit. p. 61.

27 Ibid. pp. 61, 69, 70, 73, 118.

28 Ibid. p. 63.

29 Ibid.

30 Ibid. pp. 62, 64, 74.

31 United Nations, 'Yearbook of National Accounts Statistics,' 1971, Vol; III, p. 3.

32 Nurkse, op. cit. p. 65.

33 Baldwin, op. cit. p. 83. C. P. Kindleberger in his recent monograph verifies this effect on the United Kingdon terms of trade during the period in question by demonstrating that the "merchandise" terms of trade "rose" more precipitously than the terms of trade on "current account". The latter index includes as components not only merchandise but the principal services of return on foreign investment and freight rates. C. P. Kindleberger, 'The Terms of Trade', 'Ibid.', Ch. II.

34 A. Griliches, "Hedonic Price Indexes for Automobiles : An Econometric Analysis of Quality Change", 'The Price Statistics of the Federal Government', No. 73, National Bureau of Economic Research. Inc., New York, 1961.

35 C. P. Kindleberger, "German Terms of Trade by Commodity Classes and Areas," 'The Review of Economics and Statistics', XXXVI (1954), 170.

36 Ibid. pp. 170-1.

37 Great Britain, Committee on Industry and Trade, 'Survey of Overseas Markets', (London : H. M. Stationery Office, 1927), p. 135. K. Martin and F. G. Thackeray, "The Terms of Trade of Selected Countries", 'Bulletin of the Oxford University Institute of Statistics', X (1948), 391, contend that this study calculates the effect of changing quality of products on British export prices. In studying this report this author concludes that the Committee was not referring to the effects of changing product quality on British export prices but merely showing the effect of the changing composition of exports on export prices which is a far different matter.

38 Among those studies which use United Kingdom terms of trade as the reverse of the terms of trade of underdeveloped countries are : United Nations, 'Relative Prices of Exports and Imports of Under-developed Countries', pp. 22-3 ; Folke Hilgerdt, 'Industrialization and Foreign Trade', (U.S.A. : League of Nations, 1945). pp. 16-17, 154 ; Prebisch, op. cit. pp. 8-9. Among those studies using United States data in the same manner are : United Nations, Ibid. pp. 25-8, while a variant is, Pan American Union, 'Secretariat Report on Economic Conditions and Problems of Development in Latin America, (Washington, Inter-American Economic and Social Council, 1950), pp. 63-9, which uses United States wholesale prices as representative of Latin American import prices and United States market quotations of like commodities as representing Latin American export prices.

Lessons From Cuban Experience in Development Planning

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SECTION 1

Introduction

The economic experience of India during the last twentyfour years has clearly demonstrated that if a "growth-focused" strategy of planning is adopted, serious neglect of problems of poverty, income distribution and unemployment inevitably result. The Fifth Five Year Plan aims to correct this over-emphasis on growth, by increased attention to distribution questions and to the eradication of poverty. Since in Cuban Planning from the outset creation of the "New Man" was accepted as the "fundamental task of the Revolution", it might be instructive to examine the Cuban experience in development planning to see what lessons it holds for countries like India. Section II briefly traces the historical background of the Cuban revolution in order to place the Cuban experience in proper historical perspective. Section III examines the record of Cuba in the field of social justice expressed in the measures taken by the Cuban government to reduce inequalities in society. Section IV briefly considers the growth strategies adopted during 1959 to 1970. In a concluding section, the salient points that emerge from this discussion are summarized.

SECTION II

The Historical Backgound

Before the revolution of 1959, Cuba was not an undeveloped country, but an under-developed country—that is a country whose economic and political structure had been altered and shaped to suit the needs of the global capitalist system. From the first days of European settlement until 1902, spanning a period of four hundred years Cuba was an official colony of Spain. But her independence in 1902 was short-lived and superficial because she soon became an

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economic neo-colony of the United States.[1] Cuba became a "protectorate" of the United States through the inclusion in her first constitution of the Platt Amendment permitting American intervention into Cuba at any time in the interests of political stability. In fact, prior to 1934, the United States had occupied Cuba twice under the authority of the Platt Amendment and from 1906-1908, Cuba was under direct American military rule. With the abrogation of the Platt Amendment in 1934 by Franklin D. Roosevelt the imperial-neocolonial relationship that Cuba experienced with the United States entered a subtler phase. Between 1934-1939, the Cuban economy was made subservient to the needs of the American capitalist system, and without overt political domination. The American industrial system was easily able to maintain a strangle-hold on the Cuban economy.

When the Batista government was overthrown by the Cuban Revolution of 1959, the direct investment of United States enterprises accounted for 86 per cent of the total investment in Petroleum, 52 per cent of the total investment in manufacturing and 92 per cent of the total investment in public utilities. In agriculture, United States interest accounted for only 45 per cent of the total investment in that sector, but they controlled 7 out the 10 largest Latifundas[2] in Cuba. In the area of trade, the United States gave Cuban sugar preferential tariff treatment involving of 2 cents per pound, while in return Cuba gave American manufactured goods preferential treatment for imports. As a result, 59 per cent of Cuba's total volume of exports went to the United States, and 76 per cent of her total volume of imports came from that country. Sugar accounted for over 90 per cent of the value of Cuban exports to the United States.[3]

As a result of the subservience of the Cuban economy to the needs of United States capital interests, the economy of Cuba became excessively dependent on sugar. At the time of the revolution sugar accounted for 80 per cent of Cuba's exports, and by far the majority of her workers were engaged in sugar production.

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[1] "The essence of neo-colonialism is that the state that is subject to it is in theory independent and has all the trappings of international sovereignty. In reality its economic system and thus its political policy is decided from outside." K. Nkrumah, Neo-Colonialism, the last stage of Imperialism, 1965, p. IX.

[2] Latifundas are corporate sugar plantations, responsible for the bulk of surplus sugar production for export.

[3] "United States Business Interests and the Rise of Castro", World Politics, Vol. 17, April 1965, P. 459.

That the Cuban economy should devote a substantial portion of her resources to sugar production seems natural since it is obviously an industry in which Cuba has a high comparative advantage. The unfortunate consequence of United States domination was in the failure to develop other sectors and resources of the Cuban economy. For example, Cuba's mineral resources included the world's largest known deposits of nickel, yet nickel contributed only 2 per cent of the total volume of exports. The United States government which controlled nickel deposits preferred to hoard them as strategic reserves. Other unfortunate features of neo-colonialism were a government uncommitted to the value of indigenous development, widespread corruption, low wages for domestic labour, massive outflow of resources in the forms of capital, profits, rent, royalities and interest, enormous unemployment of labour. Unfortunately the Revolutionary Government of Castro latched on to sugar as the symbol of Cuba's colonial subservience with the consequence that Cuba in the early years embarked on a disastrous growth strategy of instant industrialization and agricultural diversification in an attempt to relegate sugar to a seconday place in the Cuban economy.

SECTION III

Social Justice

From the very outset, the provision for social justice was regarded as the central underlying task of Cuban Economic Planning. And this in turn was inspired by the desire to create a "Socialist Man", a human being motivated by a feeling of love and brotherhood for his fellow man. But since the relationship between man and his material environment, represented by the economic system, determines the shape and character of the relationship between man and society at large, the revolutionary government felt the need to change the old relationships that prevailed between man and his material enviroment. More specifically, the Cuban leaders, saw the personal meterial incentives of capitalism as the progenitor of the selfish, self-centered man of contemporary bourgeoise society, and therefore resolved to change man's motivation to work. In the place of material incentives they proposed to substitute moral incentives whereby man's work would be inspired by a feeling of love and brotherhood for fellow man and not by self-interest and the desire for profits. But the habits of the old society die hard, and consequently there must be a process of dynamic transition from individual material incentives to collective moral incentives through an intermediary step of collective material incentives.

A necessary objective condition for gradually creating a man responsive to moral incentives is to remove wide social and economic disparities. In the provision of social justice the Cuban government has been outstandingly successful.

Before the Revolution, the ethnographer, Ferando Ortiz, wrote in his classic *Cuban Counterpoint : Tobacco and Sugar :*

> A large part of the working class of Cuba has to live all year on the wages earned during two or three months, and the whole lower class suffers from this seasonal work system, being reduced to a state of poverty with an inadequate, vitamin-deficient diet consisting principally of rice, bread and tubers, which leave it undernourished and the ready prey of hook-worm, turberculosis, malaria and other diseases.[4]

In Orient Province on the eve of the 1970 harvest, a young foreman told Carlos Widmann, the Argentine-born journalist.

> Before Castro, 960 mill labourers worked here three or four months per year at $3.85 daily ; in the nearby town there was just one doctor and a private school for the children of white-collar employees and a few year-round labourers. Today 1,200 men work in the mill all year at $5.20 per day, and have free lunches, housing and schools for their children. Now there are eight dectors and all the children go to school.[5]

It is easy to see that production costs at the mill would have at least doubled as a result of salary increases and giving the men year-round work. There had been some reduction in output as well from 7,000 tons per day in 1957 to 6,500 in 1970. "But, on the other hand, we have doubled the capacity of our machinery", the foreman added. "Next year we will produce 15,000 tons daily." The same situation prevails in all of Cuba's 152 sugar mills.

Thus in Cuba the provision of social justice and equality has taken precedence over narrow considerations of cost reduction and efficiency. But in the long run, this is likely to pave the way for sustained growth and economic progress.

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[4] Quoted in Norman Gall, "How Castro Failed", Commentary, Vol. 52, No. 5, November 1971, P. 46.

[5] Quoted in Norman Gall, Op. Cit., P. 46.

(1) Education

Before the revolution, the illiteracy rate in Cuba was 23.6 per cent, concentrated in the countryside. In 1960, the government laid the groundwork for a major campaign against illiteracy and appealed to 1,000 men and women with secondary education to volunteer to go into the countryside to teach others to teach. Five thousand people from all walks of life answered the call including doctors and engineers, who, of course, had to be dissuaded from this mission because their expertise was more urgently needed in their own professions.

On January 1, 1961, the *Year of Education* began dedicated to the eradication of illiteracy in Cuba in one year. Classes were set up in schools, homes, stores, offices and factories in both the city and countryside, and millions of books were printed for pupil and teacher. The whole nation became involved in the great revolutionary cultural movement of eradicating illiteracy, and slogans such as "the people should teach the people", and "if you know teach, if you don't learn", and "every Cuban a teacher, every house a school" were seen everywhere.

The campaign was a tremendous success, for on December 22, 1961, in less than one year, illiteracy had dropped from 23.6 per cent to a mere 3.9 per cent of the population.

In 1962, a follow-up campaign was established through the introduction of Worker-Farmer Improvement Courses, and carried on in adult education centres throughout Cuba. Special texts were designed especially for adult students, and more advanced texts were given at the end of the course. From 1962 to 1967 over 330,000 adults completed sixth grade in the programme and thus became eligible for advanced study. Facilities were created for farmers and workers to go to higher levels of education. Those who do not wish to opt for full-time study are encouraged to continue their education in the factories themselves. For example, "in the Moa Bay Nickel Plant, the University of Oriente has part of its school of Mechanical Engineering with plant engineers dubbing as professors. Many of the workers in the plant study under those professors and some will become engineers. Work and study have been merged."[6]

In the Cuban university system there has been a change in emphasis from the humanities to science and technology to meet the growing demand for engineers, mechanics, electricians, chemists, agronomists, and administrators. As fast as they graduate, the newly trained Cuban men and women replace the foreign specialists from friendly countries who have been teaching them in school factory and farms.

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[6] Leo Hubermam and P. M. Sweezy, Socialism in Cuba, New York, 1969.

In 1969, just eight years after the start of the literacy campaign, Cuba with an estimated population of eight million people, had 27.6 per cent of its population receiving some form of organized instruction..

(2) Health

The great emphasis placed on the need to create a healthy nation is reflected in the fact that fully one-third of the total public expenditure of Cuba is absorbed by the health budget.

Immediately after the revolution, nearly one-third of Cuba's doctors fled the country, and this together with the United States blockade that halted shipments of medical supplies and equipment, created an acute shortage of medical personel and facilities. In spite of the initial drawbacks, the Cuban revolution has made spectacular gains in all areas of medical and delivery of health services.

In the provision of health services there was a massive shift from curative medicine to preventive medicine.[7] A general campaign of preventive medicine was launched, with a major focus on the countryside. Doctors in Cuba pledge to work in the rural areas for at least two years after graduation,[8] and health facilities are freely now available in rural areas where once they were scarce and expensive.

In the country as a whole, hospitals rose in number from 57 in 1958 to 170 in 1971.

The basic object of the health system of Cuba is the prevention of sickness and disease rather than simply the treatment of illnesses. The rapid expansion of medical facilities and personnel has made possible a tremendous expansion in the application of techniques of preventive medicine. Over 400,000 women are tested annually for cerevical cancer, while over four million children were vaccinated against polio, small pox, tuberculosis, diptheria, whooping cough, tetanus and typhoid. Death rates have registered dramatic declines as can be seen from the following table.

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[7] "Capitalist medicine is mainly concerned with curing sickness, and this is done magnificently for those who live where the doctors are in abundance and have money to pay ; socialist medicine is mainly concerned with preventing illness for all the people, no matter where they live or how low their incomes." Leo Huberman and P. M. Sweezy, op. cit., P. 53.

[8] It is now a requirement for the M. D. degree that upon graduation, medical students will spend their first two years as doctors in dispensaries and hospitals in remote rural areas.

Table 1

Disease or Condition	Death Rate Before Revolution	Death Rate in 1962	1966
Gastroenteritis (per 10 thousand)	102.9	50.8	19.6
Malaria (No. of cases per yr.)	10,000	3,519	10 (1967)
Typhoid (No. of cases per yr.)	4,576	1,158 (1964)	167
Infant Mortality[9] (per thousand)	95	—	37.1
Tuberculosis (No. of deaths)	—	1,402	940 (1947)

The crude annual death rate is only a rough and ready measure of the level of health of a country, since it is restricted by differences in the frequency of deaths in specific ages and sex of the population. The rate of infant mortality (death of those under one year of age per 1,000 live births), is a more acceptable indicator of changes in the health of the people. The high rates of infant mortality among underdeveloped nations is the result of lack of services, low income, inadequate nutrition of parents, and poor hygiene ; whenever these conditions improve, infant deaths decline.[10]

In Cuba, infant mortality rates have declined quite dramatically and a number of diseases have either been eliminated or sharply cut down.

In the first years of the revolution the concept of health was dominated by an emphasis on treatment and the provision of medical services. In 1964, a shift of emphasis from quantity of treatment to quality and prevention took place as a natural second step after the material basis of health planning had been established through the expansion of medical facilities and personal. A most profound transformation has taken place in the health sector as social inequality has been abolished by the provision of free medical care, and treatment has given way to the prevention of disease.[11]

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[9] In the United States in 1966, infant mortality for non-whites, 36.7 and whites 26.6 per thousand. In the Soviet Union, the infant mortality rate is 23 per thousand.

[10] U.N., Report on the World Social Situation, (New York, 1969), pp. 23-24.

(3) Employment

In the pre-revolutionary period when Cuba was heavily dependent on the sugar industry, the highly concentrated nature of the demand for labour during the harvesting season made large-scale unemployment an economic necessity for the men who controlled the industry. One reason for this decline in sugar output in the initial years was the absence of readily available unemployed labour. While every Latin American country is characterized by heavy unemployment, Cuba has been outstandingly successful in completely eliminating this evil.

Paul Sweezy recently offered this telling comment :

> Cuba has become a much more egalitarian society than it was before or than any other Latin American society is today. Its achievements in education and health care are incomparably greater than most of anyother Latin American country. But I think perhape the most important difference is that Cuba no longer has an unemployment problem, while the problem is growing increasingly severe in all the Latin American countries which still remain entrapped in the imperialist system. It is this complete inability to cope with this problem which dooms capitalism in the underdeveloped countries to ultimate defeat.[12]

A hundred years ago, when Europe was in its development phase population was growing at one per cent per annum. Today in Latin America population increases exceeds 3 per cent per annum. This means that new jobs have to grow three times as fast. Again, capital intensity of technology is today three times which it was one hundred years ago, making it cost three times more to create one additional job. Therefore, the problem requires nine times the effort required by Europe in its development phase.[13] This is why rapid growth rates of aggregate output in Latin American countries are not an adequate condition for solving the employment problem, and in many of these countries unemployment is unmanageably large.

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[11] cf. Nelson P. Valdes, "Health and Revolution in Cuba", Science and Society, Winter, 1971.

[12] P. M. Sweezy, "Fifteenth and Twentieth Anniversaries of Cuba", Monthly Review, September 1972,

[13] cf Gerhard Drekonja, "Employment Problems in Latin America : The Columbian and Cuban Cases Compared", Studies in Comparative International Development, Vol. 8. No. 3, 1973.

In this context, the Cuban achivement is quite impressive. There chronic unemployment has given way to enormous shortage of manpower. All authorities agree on the massive unemployment that prevailed in Cuba prior to 1959. Cuban manpower resources are believed to have increased by 580,000 persons in 1956-70, while during the same period 1.2 million jobs had been created.

The strategy adopted by Cuba has enabled it to achieve this impressive record. First of all, the change from monoculture to highly diversified crop rotation brought about a more intensive use of labour. Policies of increased income equality also provided new demand for housing, schools, hospitals and other amenities. Agricultural industrialization also provided new jobs. It involved irrigation projects, dam construction, electrification, improvement of roads and the construction of agricultural implements and machinery.

Cuba's 200,000 man armed force is regarded by many as the largest military undertaking in Latin America. The army has been playing an increasingly important role in the economy and is responsible for the bulk of mechanized agriculture.

In this connection mention may be made of the Che Guevara Brigade, which has a total involvement of about 5,000 men. It has cleared tens of thousands of hectares of land for sugar plantations, intensive pastures and rice paddies. It also participates in the construction of dams and irrigation canals. It is noted for the care with which it looks after its machinery and equipment and for the technical education it imparts to its cadres. It has, furthermore, shown a total disinterest in meterial rewards, and it is interesting to note that the whole bridgade—officers and men, engineers and cooks—all receive the same salary of 160 pesos a month, plus food, lodging and medical care.[14]

Thus the Cuban experience has convincingly demonstrated that massive unemployment can be effectively converted into productive

I.L.O., Towards Full Employment, Geneva 1970.

D. Seers, "Income Distribution and Employment : A note on Some Issues Raised by the Columbian Report", Bulletin of the Institute of Development Studies, July 1970.

[14] Rene Dumont, op. cit., pp. 231-32

employment by a government committed both to economic development and social justice.

Cuba also has been happily free from the rapid exodus of people from rural areas into urban centres, a phenomenon characteristic of many developing countries. This exodus is largely the result of the stagnation of rural areas and exploitation of rural areas by towns. But in Cuba agricultural workers remain "the revolution's favoured class" and the terms of trade between town and country are weighted heavily in favour of the latter.[15] Thus making rural life attractive is an imaginative way of stemming the familiar problem of massive urban unemployment and the creation of slums.

SECTION IV

Review of Growth Strategies

(1) The Period 1959-1963

The economic performance in 1959 and 1960 was quite good, national output probably increased between 5 and 10 per cent, while industrial output may have increased by 17 per cent and 25 per cent in 1959 and 1960 respectively. The effects of the American emgargo and emigration of skilled personnel had not begun to be felt. Moreover, the existence of "excess capacity" in agriculture and industry was readily pressed into service. Perhaps, another factor too played a role. With the redistribution of incomes and power in favour of workers and peasants, there was "widening of the market" due to increased effective demand for non-luxury domestically-produced commodities. Radical changes in the system of land tenure and organization of agricultural production and distribution, reduction of urban rents by 30 to 50 per cent, reductions in electricity rates, telephone charges and medicine price and the negotiation of labour contracts all contributed to greater equality of income distribution.[16]

The first growth strategy was publicly presented in December 1961. Its major aim was to reduce dependence on sugar "monoculture", and foreign sugar markets by means of a programme of import-substituting, industrialization and agricultural diversification. Sugar production however was to remain at a high level, though its relative importance in the economy was expected to diminish. After the loss of the American market, Cuba had to turn to the U.S.S.R. and East European countries with which an agreement was reached in October 1961 for the purchase of 4.86 million tons of sugar per annum from 1962 to 1965.

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[15] James O'Connor, The Origins of Socialism in Cuba, London, 1970, P. 103.

See also Michel Gutloman, L'Agriculture Socialise'e a Cuba, Paris, 1967.

[16] A.R.M. Ritter, "Growth Strategy and Economic Performance in Revolutionary Cuba: Past, Present and Prospective", Social and Economic Studies, September 1972, P. 314.

The first growth strategy failed. It was too much based on the "Soviet model of development" and Soviet notions of "proportionate growth", appropriate perhaps for a large country with diversified resources and a large population but unsuited to a small country of barely eight million people. Moreover, the growth strategy more or less completely ignored the law of comparative advantage, and the industrialization did not take into consideration Cuba's "new material base, her technical and administrative capabilities, or balance of payment factors."[17]

The failure in agriculture was due to many factors of which the most important was probably the lack of experience of the farm manager who were drawn mainly from the Revolutionary Armed Forces.[18] The diversification of agriculture was not carried out in a systematic fashion, and good cane lands were often diverted to other less profitable crops. Crop diversification programmes should have been carried out on the basis of regional specialization, instead it was carried out within each State Farms. Rene Dumont, world-renowned expert in agricultural planning, in his report to the Cuban Government in 1960 stressed that :

> The Cuban agricultural situation in the summer of 1960 is more serious than it appears to be to many responsible people. A production unit must not be managed like an administrative bureau, with civil servants, and in particular it must not be run with a bureaucratic mentality. Errors must come to notice faster, so as to be corrected faster...announcing on all sides that everything is going very well is not the best way to reach that goal. It's necessary to pass from the frame of mind in which certain claims are made, which easily leads to demagoguery, to the frame of mind of the State, which can distribute only what has

[17] A.R.M. Ritter, Op. Cit., P. 319.

[18] The Revolution (October 1963), Che Guevara admits this : "The leaders of the Revolution were only a group of combatants who had lofty ideas, but who were not sufficiently prepared."

actually been produced, and must therefore make production its prime concern.[19]

René Dumont was in favour of broad autonomy to the agricultural co-operatives, each of which should be organized on proper principles of efficiency. He was opposed to too much rewards to the peasants before increasing production. He complained that "if the U.S.S.R. exploits its peasants, Cuba spoils them too much."[20] On a per capita basis agricultural output fell approximately 32 per cent, and sugar output declined from a near record of 7.0 million tons in 1961 to about 3.6 million tons in 1963.

Industrial production was relatively stagnant, and through investment increased substantially between 1961 and 1963, there was no comparable increase in output. The American embargo on trade with Cuba caused considerable disruption of the economy. The depth of the crisis of supply in foreign trade was serious. The United States blockade, supported by all Latin American countries except Maxico, called for a massive shift in Cuban trade, and in the absence of foreign exchange resources for buying in Western Europe, Cuba had to rely on the Soviet Union and the East European countries, whose technology and specifications were quite difficult, and often not as efficient.[21] Moreover, the net emigration, totalling at least 196,000 persons from 1959 to 1963 aggravated the shortage of high and middle management and technical personnel. Further, there was a lack of a sophisticated planning apparatus that could supply the necessary information about investment, resource utilization and production that might enable the country to deal effectively with the problems and insufficiencies it faced. Though between 1961 and 1963, there was probably some increase in industrial production, but certainly not in proportion to the effort, it seemed certain that more tricks were brewing. Therefore, the decision to completely alter the development strategy was made.

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[19] Rene Dumont, Cuba : Socialism and Development, pp. 46-47.

[20] Rene Dumont, Op, Cit., P. 47. Cuba's first Land Reform Act (May 1959) marked the beginning of a far-reaching change in the system of land tenure and organization of agricultural production and distribution. It was administered by the INRA (National Institute of Land Reform) and its major plank was the expropriation of all large landowners—all holdings over 30 caballeries (402.6 hectares) were confiscated. As a result, 40 per cent of all of the farm land came into state hands and was organized into three basic forms of public control : (1) sugar cane co-operatives ; (2) people's farms, and (3) farms under direct state management. The remaining 60 per cent of the Cuban farm land continued to be held in small holdings in the private sector.

[21] For example, a factory bought in Poland required 270 workers to produce what 25 workers could turn out in a "Western factory". cf K. S. Karol, Guerrillas in Power : The Cause of the Cuban Revolution, Paris, 1970, P. 225.

(2) The Second Period (1964—1970)

The new strategy recognized the depth and seriousness of the foreign exchange crisis, and the unwisdom of not fully utilizing the vast comparative advantage possessed by Cuba in sugar. It also decided to develop those industries which utilized Cuba's natural resources and which were geared to the needs of agriculture. It was hoped that sugar exports would earn the foreign exchange necessary for full-scale industrialization in the decade of the seventies. Thus came out the million ton sugar production target for 1970. Industrial development was geared to the needs of agriculture, and over-all gross investmet as a percentage of gross material product increased from 17 per cent in 1964 to 31 per cent in 1968. Some of the economic indicators for the period 1957 to 1970 are given in Table II.

The 8.5 million tons of sugar output, though it failed to meet the target of 10 million tons was the largest in Cuba's history. This would have been a remarkable achievement were it not for the fact that by gearing the entire economy to meet this target, too many sacrifices were imposed on the other sectors of the economy.

In his famous speech of July 26, 1970, Premier Castro candidly assessed the reasons for the failure to record the target of 10 million tons and also referred to the short-falls in the other sectors of the economy. This failure was neither due to cutter shortage nor transportation difficulties, but to problems in the milling of the sugar cane. The major blame was laid by Premier Castro on the decay in the calibre of sugar mill management. The diversion of resources from other sectors inevitably resulted in a fall in their output. In industry, deliveries of steel were 38 per cent lower than in the previous year, output of leather footwear fell about 20 per cent below the target, soap production by 33 per cent.[22] But important advances were made in some sectors such as poultry, dairy, rice, fisheries and nickel mining.

Although the economic performance during the period 1964 to 1970 was not very impressive, it was still based on a sound growth

[22] "Speech of July 26", Granma Weekly Review.

strategy. In the period 1970-1975, Cuba might be expected to do much better, if the failures in previous policy are carefully noted and corrected.

If her trade with the rest of Latin American and the United States could be resumed, her economic prospects would be greatly improved.

SECTION V

Conclusion

In the contemporary world any country desiring economic development has to fulfil three necessary conditions: First, it has to extricate itself from the world capitalist system, and bring about a structural transformation of her economy in tune with the needs of her development. Secondly, it should obtain a high level of capital formation, and thirdly, it should have an appropriate economic and social policy to promote growth—a proper growth strategy, and the right type of policies to implement this strategy.

The Cuban economy has certainly fulfilled the first two conditions. It has broken out of the global capitalist system, and has attained a high level of capital formation. (Table II). But it has not been as successful in designing and implementing a proper growth strategy. As Premier Castro, noted in his famous speech of July 26, 1970, "The learning process of revolutionaries in the field of economic construction is more difficult than we had imagined. I believe that we, the leaders of this Revolution, have cost the people too much in our process of learning. One of our most difficult problems—and we are paying for it dearly—is our heritage of ignorance."[23]

The cost to the people and the economy would have been more severe, if during this period the economy had not been receiving substantial foreign assistance from the Soviet Union. Quite apart from the fact that there is a foreign aid element in the price she pays for Cuban sugar, the Soviet Union has also been under-writing the bilateral trade deficit of Cuba with her which has been estimated to be about $384 million in 1968. This works out to a foreign aid of $46 per capita, compared to less than $2 per capita received by India, and an average per capita aid figure of $4.1 for all developing countries from 1964 to 1967.[24]

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[23] Ibid.

[24] A.R.M. Ritter, op. cit., pp. 332-333.

It might also be asked if Cuba has not really changed the economic masters, instead of becoming truly independent. The Soviet Union accounts for approximately 44 per cent of Cuba's exports and 52 per cent of her imports. The corresponding figures for her trade with the United States in the period 1955 to 1958 were 64 per cent and 73 per cent. Thus the extent of trade dependence has not been so great, and therefore she has succeeded in diversifying her trade somewhat. There is another important difference which should not be overlooked. The Soviet Union does not own any Cuba enterprises or means of production, and her economic assistance to Cuba takes the form of grants and loans. Therefore, it would be reasonable to draw the inference that Cuban economic is not under the economic domination of the Soviet Union as it was under the economic domination of the United States in the pre-revolution days.

But all this does not alter the fact that the Cuban economy has been bolstered up by massive Soviet aid, without which it would face imminent collapse. This is a true measure of the seriousness of her failures in economic policy in the past. The enormity of this shortcoming is somewhat softened by the consideration that in the field of social justice she has been pre-eminently successful—improvement in the standard of living for the masses, reduction of inequalities, eradication of illiteracy, and the provision of adequate health care and medical facilities for all. These are major achievements. But in a sense this very achievement underscores the seriousness of the failures in the policy field. It is only when efforts in the field of social justice and economic development are not properly co-ordinated that a trade-off relation would exist between them. Had all these social justice measures been properly integrated with the development effort, they should actually accelerate the development process by harnessing the energy, enthusiasm and the talents of the masses to the task of development. Most authorities agree that there has been too much of centralization of decision making. It is probably the inevitable consequence of an acute shortage of skilled personnel in the country. Since the creation of the "New Man", free from avarice, greed and selfishness and dedicated to the cause of the common good, has been a paramount goal of economic planning, the Cuban leadership has been opposed to decentralization which would create inequalities among different groups of workers. It is that tendency of co-operation in cane production that prompted the decision to replace them with State farms. Along the same reasoning Ernest Mandel and Che Guevara favoured strong central planning. Mandel claimed that "Socialist construction is impossible unless the law of value is eliminated from dealings among enterprises, even if real costs should serve as guideline to planning. The law of value is no more relevant in this case then it is in transactions between two departments of Ford Motor Company."[25] Since the economy is like one big firm, there should be no mercantile dealings among enterprises. In the "great debate" it was this point of view that carried the day. But at the same time there must be a system of self-management to ensure true democracy, and at the centre there must be adequate expertise in the use of planning. As Leontief has so well put it, "Large-scale economic planning, so long as it has not yet become an applied science, remains to a large extent an art that cannot be taught but rather must be learned from painful practical experience."[26]

There is some evidence that the system of moral incentives is not yet working very effectively. This is not surprising since so radical a change in human nature and behaviour could not be expected to take place within so short a time. The wonder is really that the pervasive gangsterism and corruption that were widespread in Cuban life disappeared so suddenly following the revolution. There is a good possibility therefore that moral incentives will take hold in Cuba. Absenteeism careless handling and poor maintenance of machinery and buildings are no doubt "one of the surest signs of an insufficiently motivated labour force", and these problems have to be dealt with effectively and imaginatively, otherwise, "large-scale introduction of costly new equipment might aggravate the economic difficulties of Cuba instead of alleviating them."[27]

Now that Cuba has finally evolved a "growth strategy" suited to her needs, she will have to introduce far-reaching and fundamental reforms in the organization of production, the distribution of resources, in the eradication of those cadres necessary for the management of the nationalized economy, in the relationships between planning bodies and individual enterprises, and in the incentive systems that operate in the economy, if during the decade that lies ahead Cuba should attain higher levels of growth without dependence on massive dose of foreign aid.

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[25] David Lehmann, "The Trajectory of the Cuban Revolution", The Journal of Development Studies, January 1971, P. 204.

[26] Wassiley Leontief, "The Trouble with Cuban Socialism", New York Review of Books, January 7, 1971.

[27] Ibid.

Table II : Some Econometric Indicators, 1957-1970

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Per Capita Agricultural Production	101	98	101	101	106	85	72	75	89	72	88	79	73
Per Capita Food Production	101	99	101	100	106	83	71	75	90	72	88	80	73
Sugar Production (Millions of Metric Tons)	5.7	5.8	5.9	5.9	6.8	4.3	3.8	4.4	6.1	4.5	6.1	5.1	4.3
Nickel Production (1000 Metric Tons)		18	17.9	14.5	18.1	24.9	21.6	24.0	29.1	27.9	34.9		
Export of Sugar to the U.S.S.R. (in Millions of Metric Tons)									2.1	3	4	5	5
Investment as a Percentage of GNP (Gross Material Product)					17.9	17.8	17.9	19.5	20.0	22.8	27.1	31.0	

Source : U. N.. FAO Production Yearbook, 1969, 1970.
U. N., Statistical Bulletin for Latin America, 1971.

In 1970, the East European Socialist Nations and China produced about 3.5 million metric tons at the same price partly the Soviet Union of 6.11c/lb. Between 1963 and 1967, the world market price for sugar averaged 3.39c/lb., and in 1966 was 1.86c/lb.

Myths of Price Inflation and Deficit Financing in India

G. P. Mishra*

This paper makes an attempt to explode certain myths relating to the philosophy of development and deficit financing which have been implicit in the strategy of planning for growth with social justice in India. What has been implicit therein has been actually the legacy of the Western line of thinking on the problems of growth and planning. This is also one of the purposes of the paper to show.

At the background of the above, this will discuss the following :

(a) the myth of inflation,
(b) the myth of economic development and growth,
(c) price rises and deficit financing,
(d) where fallacies lie,
(e) conclusion.

PART I

Myth of Inflation

Inflation as a phenomenon is capitalistic in origin and the concept as such is monetary in character. Its origin is capitalistic in nature because the system and mode of production and distribution operating on the basis of private property and private enterprise have the in-built nature of speculation. The in-built speculative behaviour of such production and distribution system leads to the creation of a situation of 'glut' or 'scarcity', being subject to the supply-demand condition of output prevailing therein. The scarcity situation resulting from the speculative behaviour of market concerning the motive to maximise money income leads to the phenomenon of inflation.

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Note ; Agricultural prices are taken into account in this paper as their movements are solely responsible for changing the whole price structure and its flow in the country.

Inflation, the concept as such, is monetary in character because the system and mode of exchange and distribution are money-oriented in operation. The deviation from 'the rule of proportionality' that operates in the money-oriented system of exchange and distribution through the price mechanism of market, makes the existence of 'glut' and 'scarcity' explicit leading to deflation and inflation accordingly. The German hyper-inflation and the American 1930's depression bear a witness to this fact.

The orthodox and traditional classical theory of inflation imputed changes in price level to changes in the quantity of money. This implies that inflation is a consequence of the increase in the supply of money, assuming a given propensity to hold money in terms of cash-balance and full employment output as perfectly inelastic. Keynes in 'How to Pay for the War' emphasised the level of money income and expenditure as the main determinant of the price level. His 'General Theory' asserted excessive demand over supply as responsible for inflation in the full employment economy. This demand-pull theory of inflation was carried on further by a number of Western economists to show inflation as a product of excess demand over supply. In this theory, different sources of demand-raising were taken into account by them in order to explain how the demand exceeds the supply leading to inflation. Holzman[1] stressed the redistribution of income which occurs at full employment and the resistance of economic groups to such changes which may cause money incomes and prices to rise to a much greater extent than can be accounted for by the multiplier analysis alone. Brems and Turvey[2] were of the opinion that the market for factors of production in addition to the market for goods should be taken into account for knowing how 'the demand-pull' forces operate and lead to inflation. It is pointed out that for a full inflation there must be both a goods and a factor gap, each involving positive excess demand.

The major feature of the post-war debate on inflation has been the distinction between 'demand-pull' and 'cost-push' explanations. In the General Theory itself Keynes stressed the relationship between prices, productivity, and costs in the shape of the money wage level. Thus, in a sense we have two approaches from the Keynesian literature, the one demand and the other cost oriented. Weintrab[3] has provided an analytical model for this dichotomy by interpreting these approaches on the Keynesian system and the latter aspect has been fully urged by him to study the case of inflation, Ball and Bodkin[4] have made an attempt to synthesise these two apparently different approaches in the determination of the general price level following the Keynesian principles which have treated them as interesting and giving special cases at each end of the spectrum. In other words, they have examined the phenomenon of inflation on the Keynesian system of 'demand-pull' and 'cost-push' forces. This analysis is again confined to an economy which has attained a near-full employment state on the capitalistic base of production. These developments along the Keynesian lines were again extended by economists with the monetary rival. The Keynesian theory shows that changes in the money supply affect the rate of interest and the level of expenditure. Assuming changes in the level of expenditure as the main determinant of the price level, the economists of the post-Keynesian monetary school emphasised the importance of money in relation to the interest elascitity of aggregate spending in the inflationary process. Morton[5] revived the importance of money supply in inflation by arguing that both demand and cost inflation stem from impropriate monetary policies and the authority's willingness to create the money necessary to maintain full employment for any money wage level negotiated by the trade unions. The quantity theory of money revisited and revived by Friedman Milton[6] ressurected the importance of the substitution relationship between money and assets. The basic postulate of the new quantity theory of money is that there exists a stable demand function of money which depends on the expected rate of price change. Hence Milton and the supporters of his view want to maintain a monetary policy which may ensure stability condition. Milton holds the view that it is the stock of money rather than the level of income and expenditure which determines the rate of inflation and the level of output.

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[1] Holzman, F. D. 'Income Determination in an Open Inflation', Review of Economics and Statistics, Vol. 32 (1950), pp. 150-58.

[2] Turvey, R. and Brems, H. 'The Factor and goods Markets', Economica, vol. 18 (1951), pp. 57-68.

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[3] Weintrab, S, 'The Keynesian Theory of Inflation : The Two faces of the Genus ?' International Economic Review, vol. 1 (1960), pp. 143-55.

[4] Ball, R. T. & Bodkin, R. C. 'Income, the Price Level, and Generalised Multiplier in Keynesian Economics : Metroeconomica, vol 15 (1963), pp. 59-81.

[5] Morton, N. A. 'Trade Unions, Full Employment and Inflation', American Economic Review, vol 40 (1950), pp. 13-39.

[6] Milton, F. Studies in the Quantity of Money, Chicago University Press, (1956).

(Continued on page 85)

The Technologically Oriented Demand for Outdoor Recreation : A Regional Econometric Study

Philip H. Siegel* and David R. Meinster**

I. Introduction

It is widely known that the demand for outdoor recreation has been increasing at a rapid rate during the last decade. In addition, it has been noted that the private price mechanism cannot be relied upon to effectively serve market need in this area.(13, 14, 17) Recognition of this situation has led to the search for a systematic method of estimating the demand for recreational resources as an aid in appropriate government policy making.

Consequently, there has been considerable recent professional interest in dealing with the economics of outdoor recreation. For example, see(1, 5, 10, 14, 15, 17). We question the theoretical underpinings of such approaches, especially when qualitative variables are given the major role (such as sex, age, race, education, and recreation). We maintain that major emphasis should be placed upon economic variables which can be quantifiably measured if they are available. We maintain that since technologically oriented outdoor recreation generally involves expenditure on durable goods, and since these expenditures are often externally financed, financial variables should be given consideration. The framework of analysis for such consideration has been well established in the literature on the demand for consumer durables. (6, 8)

In this paper we shall estimate a regional demand function for a specific form of technologically oriented recreation (TOOR) ; namely power boating in Pennsylvania. Other forms of TOOR include pleasure flying, and snowmobiling. These activities have recently been increa-

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sing at a much faster rate than other outdoor recreational activities.[1] In addition, these are relatively recent forms of outdoor recreation and therefore little is known about their pattern of demand. Such information is necessary, however, in guiding policymakers in making appropriate allocative decisions such as providing artificial lakes, dredging rivers, setting aside acreage for snowmobiling, increasing and improving private airport facilities.

For these reasons research specifically directed at TOOR would be most useful. Although other authors have included TOOR in their general studies, most have failed to treat it as a useful form of outdoor recreation.(15)

II. Basic Model and Data

In accordance with the literature on consumer durable demand functions, we can write the demand function for power boats in Pennsilvania as follows :

$$BR = a_0 - a_1 Y_{PA} + a_2 P_t - P_{t-1}(1) + a_3 r_{Baa} + a_4 TC + a_5 \frac{P_B}{P_R}$$

where :

BR=New boating registrations in Pennsylvania

Y_{PA}=Personal income in Pennsylvania

$P_t - P_{t-1}$=Change in Pennsylvania population

Baa=Baa bond yields

TC=Total U.S. consumer credit

P_B=Index of power boat prices

P_R=Recreational price index

The following assumptions are made :

$a_1 > 0$: Most studies have found a significant positive relationship between income and outdoor recreation participation. (18, 10) Moreover, recent econometric work on the demand for durable goods also support a positive mean effect. (6, 8)

$a_2 > 0$

$a_3 > 0$: Consumer durables are often externally financied. The Baa yield is assumed to be a proxy measure of the cost of financing.

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[1] Clawson and Knetsch (4) state that fishing and hunting participation (measured by number of licenses) have increased by 225 per cent from 1941 to 1960 whereas the growth rate for technologically oriented farms (personal consumption expenditures for durables sports equipment) have increased by 1156 per cent over the same period.

Moreover, consumer durables can be viewed as a long-term investment, competing with financial investments in the household's portfolio.

$a_4>0$: Households may be limited not only by the cost of consumer credit, but also by its availability. In addition, total credit is an indicator of general financial market conditions.

$a_5>0$: Some growth in the demand for TOOR may be attributed to changes in its price relative to other forms of recreation.

The data employed are as follows : boating registrations were obtained from the Commonwealth of Pennsylvania Fish Commission, Marine Technical Services. Personal income was furnished by the State Planning Commission, Commonwealth of Pa., Governor's Office. Population data were collected by the Bureau of Industrial Development, Dept. of Commerce, Commonwealth of Pennsylvania. Bond yields and the recreational price index and total credit were taken from various issues of the Federal Reserve Bulletin, Board of Governors, Federal Reserve System, Washington, D.C. The index of power boat prices was built from data found in the Annual Market Research Notebook of the Boating Industry Associations, Chicago, III.(2) All data are seasonally adjusted and de-trended.

III. Empirical Findings

The equations under discussion were estimated using single-stage least squares regression techniques. Quarterly data from the first quarter of 1962 through the fourth quarter of 1969 were applied to eleven equations. Ten regression equations estimated the selected Pennsylvania counties during this above mentioned period and one equation estimated the entire state of Pennsylvania.

The following basic model was estimated for the state of Pennsylvania : (2) $Y=Bo+B_1X_1+B_2X_2+B_3X_3+B_4X_4+B_5X_5+U$

where

Y=TOOR for the state of Pennsylvania as represented by boating registrations

X_1=personal income in Pennsylvania

X_2=population changes

X_3=yield on Baa bonds

X_4=total credit

X_1=index of relative boating prices

The results of the estimation are as follows :

$$(3)\quad Y=66.409+\underset{(1.936)^*}{.0012099X_1}+\underset{(.636)}{.000375668X_2}+\underset{(-7.716)}{121.102324X_3}$$

$$+\underset{(5.357)}{27.72976381X_4}+\underset{(.952)}{52.516X_5}$$

$R^2=.86$

$S.E.E.=26.49$

$D\text{-}W+1.92$

$F=8484.34$

The regression results suggest that financial variables as well as income have an important impact on the demand for TOOR. Note the high negative relationship between interest rates and TOOR. This strongly suggests that the availability of credit and the cost of financing durable goods play a major role in shaping the TOOR demand. In addition, with the exception of prices which were insignificant at a 5% level, all the other variables were significant and evinced the hypothesized direction of impact. (2)

The next step in the empirical work was to estimate the demand for TOOR on a county basis. Ten counties were selected based upon their relationship to navigable waterways. Five Pennsylvania counties were selected which do not have any significant navigable water and five counties which do not have nevigable waters. The rationale for this approach was to further test the hypothesis that quantitative economic and financial variables strongly influence the level of TOOR demand rather than proximity to water. Boat owners and other TOOR participants frequently use a trailer to reach recreational locations.

The "water-oriented" counties included Warren, Fayettee, Pike, Luzerne, and Crawford. The non "water-oriented" counties selected were Montgomery, Lehigh, Lancaster, Cumberland, and Bedford. The results which will follow did not show any differences between the water and non-water oriented counties.

The model to be estimated using time series data covering the same time periods previously specified for the ten counties is :

$$(4)\quad BR_i=a_0+a_1Y_i+a_2(P_t-P_t-1)_i+a_3R_{\mathrm{OB}}+a_4TC+a_5\frac{P_{\mathrm{B}}}{P_{\mathrm{R}}}$$

where BR_i represents boating registrations in the i^{th} country ; Y_i

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* The number in parenthesis is the 't' value of the partial regression coefficient.

[2] It must be pointed out that population was only marginally significant at a 10% level of confidence.

Table I

Ten Pensylvania Counties' Toor Demand Equations

County	Y_i	$(P_t - P_{t-1})_i$	R_{CB}	TC	$\frac{P_B}{P_R}$	SEE	F	R^2
Lancaster	.0413	.2996	−.2504	.7302	.0546	.936	99.76	.75
	(2.775)	(−2.29)	(−2.29)	(12.66)	(−1.55)			
Montgomery	.1458	.000078	−38.0990	4.0777	17.085	1.711	498.06	.98
	(1.612)	(2.326)	(−8.656)	(2.96)	(1.147)			
Bedford	.0032	1.491	−9.5107	1.5877	−7.5120	16.189	31.14	.74
	(1.932)	(2.573)	(−2.460)	(2.23)	(−1.561)			
Crawford	.1405	−.00080	−100.1085	33.6210	−147.406	14.04	77.01	.93
	(1.735)	(−.202)	(−3.01)	(3.135)	(1 764)			
Fayette	.1893	−.04474	−78.5984	24.3222	−164.675	12.83	75.84	.62
	(1.393)	(−4.051)	(−2.64)	(2.409)	(−1.555)			
Lebanon	.0416	.3387	−17.0376	4.9194	−27.963	17.28	17.10	.71
Pikes	.6258	1.6377	−30.4333	1.1437	−11.828	15.18	12.37	.65
	(6.427)	(3.527)	(−4.615)	(1.811)	(−1.903)			
Warren	1.8109	.1829	−.1335	.5349	−.0737	.54	715.62	.95
Luzerne	.8656	4.2137	116.667	34.7061	−228.4711	2.713	15.50	.72
	(1.476)	(3.799)	(−2.599)	(2.48)	(1.983)			
Cumberland	.0972	.2028	−6.549	2.8723	−13.63	2.491	14.77	.73
	(1.651)	(3.368)	(−2.139)	(1.50)	(1.547)			

represents personal disposable income in the i^{th} country; and $(P_t - P_{t-1})_i$ represents population change in the i^{th} country. The remaining independent variables and the expected coefficient signs of all the independent variables are the same as those in the previous time series model tested.

The results of the single-stage least squares regressions are shown in Table 1.

IV. Conclusion

This study, utilizing a regional econometric approach, analyzed the demand for TOOR within the context of consumer durable goods demand theory. Regression equations were estimated of the TOOR demand function for the state of Pennsylvania as a whole and for 10 selected water and non-water counties. Only quantitative measures were employed as explanators variables. Overall, it was found that financial variables were more systematically related to the TOOR than non-financial

We hold that our finds lend some support to applying consumer durable demand theory to part of the analysis of the demand for outdoor recreation. It must be noted that our approach does not entirely follow consumer durable theory in that we used boating registrations as the dependent variable instead of the dollar amount spent on TOOR. In addition, various statistical and functional forms could be tested if the latter were employed and therefore even stronger support for our approach might be offered.

The policy implications of our findings are obvious. Although long term government influence on the supply of outdoor recreational facilities has long been recognized, this paper suggests that government macroeconomic stabilization policies which directly and indirectly influence financial variables also indirectly influence the cyclical demand for TOOR. The authors hope that this new dimension of policy infiuence on TOOR will be recognized and the appropriate action will be taken.

Bibliography

1. Bechter, Dan M., "Outdoor Recreation", Monthly Review, Federal Reserve Bank of Kansas City, November, 1970
2. Boating Industry Association, Annual Market Research Notebook : The Marine Market ; 1968, Chicago, Illinois
3. Cicchetti, C. J., et al, The Demand and Supply of Outdoor Recreation : An

Econometric Analysis, New Brunswick, N. J., Bureau of Economic Research, Rutgers University, 1969

4. Clawson. Marion, Methods of Measuring the demand for and Value of Outdoor Recreation, Resources for the Future, Washington, D. C., Feb., 1959
5. Clawson, Marion and Jack L. Knetsch, Economics of Outdoor Recreation, Baltimore, Md. : John Hopkins Press, 1966
6. Duesenburg, J. S. Fromm, G., et al., The Brookings Quarterly Econometric Model of the United States, Chicago, III, Rand McNally and Co., 1965
7. Gillespie, G. A. an E. Brewer, "Effects of Non-Price Variables Upon Participation In Water Oriented Outdoor Recreation," American Journal of Agricultural Economics, Feb., 1968
8. Hamburger, Michael, "Interest Rates and the Demand for Consumer Durable Goods" American Economic Review, December, 1967
9. Klein, Laurence, An Introduction to Econometrics, Englewood Cliffs, N. J. ; Prentice-Hall, 1962
10. Mueller. Eva and Gerald Guerin, The Demand for Outdoor Recreation, Ann Arbor, Michigan ; Institute for Social Research, University of Michigan, April, 1961
11. Musgrave, Richard A., The Theory of Public Finance, New York, New York ; McGraw-Hill, 1959
12. Owens, Gerald P., Outdoor Recreation, Participation, Characteristics of Users, Distances Traveled and Expenditures, Research Bulletin 1034, Wooster, Ohio ; Ohio Research and Development Center, April, 1970
13. Pearce, Peter, "A New Approach to the Evaluation of Non-Price Recreational Resources", Land Economics, Feb., 1968
14. Robinson, Warren E., "The Simple Economics of Public Outdoor Recreation," Land Economics, Feb., 1967
15. U. S. Department of Agriculture, Economic Research Service, An Econometric Model for Predicting Water Oriented Outdoor Recreation, ERS402, Washington, D. C., March, 1969
16. Volk, D, J., "An Operational Model for Predicting Reservoir Attendance and Benefits : Implications of a Location Approach to Water Recreation," Papers of the Michigan Academy of Science, Arts and Letters, 1961
17. Wennergren, E. Boyd, "Surrograte Pricing of Outdoor Recreation." Land Economics, Feb, 1967

IN U.S.A.

There were 14.3 million young men and women 16 to 24 years old attending school in the year ending in October 1972 ; of that number 5.2 million had jobs. [U.S. Department of Labor.]

China's Economic Growth Since 1950

Debesh Bhattacharya*

The central purpose of this study is to analyse Chinese economic growth since 1950. There are many similarities between India and China, especially the patterns of their physical and human resources. Both these countries are predominantly agricultural and the present government inherited economies torn by partition in the case of India and civil war in China and both were ruthlessly exploited by foreign colonial interests over a considerable period of time. In the late 1940s both India and China were characterised by semi-feudal and explotative relations of production, fragmentation and subdivision of land-holdings, considerable inequality of distribution of income and wealth, significantly acute open and disguised unemployment, and abysmal poverty.

With more or less similar economic conditions, China and India embarked on the task of development and reconstruction at the same time—in the early fifties—but under contrasting political systems. India follows a democratic structure and her economic system is basically capitalistic, whereas China has adopted a Marxist socialist system. Hence this study is important for the students of Indian socio-political system from the point of view of the effectiveness of different political systems and development strategies applied to solve the difficult problems of China and India.

A detailed study of Chinese economic growth is difficult to comeby for the following reasons. First, a major problem is that in China the state and availability of statistical data are bad. Moreover, conti-

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nuous changes in coverage and reporting systems in China make the problem worse for any serious study. Second, there has been a black-out of economic statistics imposed by China in 1960, and continued ever since. As a result of this, we have to rely on sources that are not reputed for their impartiality.

Despite the severe limitations of statistical data, it is hoped that we would be able to derive some rough generalisations regarding the trends of economic growth in China, and in view of the importance of China, it may be worthwhile to draw attention to them.

A suitable definition of economic growth and the objectives of Chinese economy will be discussed in Seetion 1. In Section 2, the achievements of China during the last twentytwo years will be analysed. Many important observations, conclusions and policy recommendations will be suggested in the same section.

SECTION 1

Chinese economic growth occurs within the context of central planning, public ownership of means of production, and agricultural cooperatives or communes. While decision-making is largely decentralized now a days, decisions regarding investment vs. consumption, urban-rural policy, exports-imports allocation of resources, and prices of goods and services—these are essentially in the hands of the State.

Chinese First Five Year Plan for the period 1953-57 followed the Soviet iudustrialization model. Prior to 1958, Mao-Tse Tung was not involved in economic policy. In his own words, "my energy was primarily devoted to the field of revolution. I was a layman construction and knew nothing about industrial planning."

Mao's policies of 1958 and 1959 represented China's first attempt to break away from dependence on the Soviet model. Mao was responsible for the establishment of the People's commune. He advocated balanced growth of both industrial and agricultural secters of the economy. His "Walking On Two Legs" policy is summarised as :

"Both industry and agriculture and both light and heavy industry are to develop simultaneously. Through centralised leadership, both central and local industries are to be expanded at the same time and both foreign and indigenous production techniques are to be employed together."

The Western view of the "Great Leap Forward" programme is that it was a colossal waste and it is true that there were considerable hardship, malnutrition and industrial chaos during the latter half of 1959 and 1960. At the same time the U.S.S.R. ceased all economic aid. Some 1200 Soviet technicians were all called back to Russia and they took with them even the blueprints for industrial projects.

The economic crisis brought in by these factors led to a new economic policy (1961-1965), which was developed when Mao was not in the ascendency. The New Economic Policy provided greater scope for market forces and free price movements, a shift to profitability and productivity as motive forces in production, a strengthening of the authority of managers and ministries at the Centre, compared with the local ones.

During the first half of the 1960's Mao started denouncing the use of economic incentives, in wages as well as bonuses, as a means of raising the quantity and quality of production. In his view the New Economic Policy was running the danger of gloryfying the successful technicians, engineers and bureaucrats at the expense of the true believer who was expected to sacrifice and practise self-denial in the interests of strengthening the State. Mao started preaching, "Oppose using material incentives to corrode the revolutionary will of the masses, and prevent scientific technical experts from being spiritual aristocrats sitting high above the workers and peasants."

According to Mao, the solution to the problems of New Economic Policy was to return to the ideological approach i.e., to cleanse the minds of the Chinese people, washing away bourgeois ways of thinking and replacing them with true socialist values. It is clear that since the summer of 1966 (when China was experiencing Cultural Revolution) Mao's entire economic objectives have been intensely concerned with this goal. Accordingly, the Maoists believe that economic development can best be promoted by breaking down specialization, by dismantling bureaucracies, and by undermining the other centralizing and divisive tendencies that give rise to experts, technicians, and bureaucrats remote from or manipulating "the masses". Further they also believe that, while a principal aim of nations should be to raise the level of material welfare for the population, this should be done only within the context of the development of human beings and of encouraging them to realize fully their manifold creative powers. According to Gurley*, the Maoist add that it should be done only on an egalitarian basis, that is, on the basis that development is not worth much unless every one rises together. "No one is to be left behind, either economically or culturally. Indeed, they are convinced that rapid economic development is not likely to occur unless every one rises together". They reject any strong emphasis on profit motives and efficiency criteria that lead to lopsided growth.

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* Monthly Review, February, 1973

Thus, Mao has made the welfare of the masses the ultimate objective of Chinese economic growth. The importance of the common people in his eyes was expressed most dramatically in his declaration: "Our God is none other than the masses of the Chinese people." Mao seems perfectly willing to pursue the goal of serving the masses even though it is temporarily at the expense of some economic growth. He believes that each person should be devoted to "the masses" rather than to his own pots and pans, and should serve the world proletariat rather than reaching out with "grasping hands everywhere to seek fame, materal gain, power, position, and limelight. If a person is selfish, he will work harder for narrow, selfish goals than he will for group, community or national goals." The Maoist concept of an ideal man is stressed as the biggest contribution to economic growth.

SECTION 2

In this Section, we will study the achievements of Chinese economy compared to that of India during the last twenty two years.

In assessing the performance of Chinese economy, the most important indicator is the annual harvest of grain. Use has been made of Eckstein's analysis (from the estimates by Dawson, Jones, the State Department, U.S.A., and the Agricultural Attache in the U.S. Consulate General, Hong Kong) and Chao Kang's independent study of Agricultural Production in Communist China, 1949-1965. I have also used the estimates provided by Perkins and Rawski.

There is a general agreement among most students of Chinese economy that the official agricultural production series, whether expressed in tonnage or value terms, are not reliable because of the incomplete crop reporting in the earlier years of 1949 and 1950. Consequently they underestimate the offical rate of growth figures for the 1952-57 period. Most estimates accept the official 1957 figure of total grain and grain equivalent output of 185 million tons. From then onwards, all other figures are seriously contested and most China-experts regard 1958 and 1959 figures as "propaganda, lies and errors." Eckstein's estimates are based on the reconstructed Chinese official series, but they disregard the official figures for 1958 and 1959 and instead use the State Department estimates for 1958-59. Table 1 shows the different estimates of rates of growth of grain output in China since 1952.

Table I

Different Estimates of Annual Rates of Growth of Grain Output in China

I. In physical grain production terms (in percentages)

Years	Sources of Estimates							
	Reconstructed Official	Dawson-Jones	State Dept.	Consul General	Chao	Perkins	Assessment	Rawski
1952-57	3.7	1.7	—	—	2.3	—	—	—
1957-65	1.0	1.0	1.0	0.0	1.0	—	0.1	1.2
1952-70	2.3	—	1.3	1.3	—	—	—	—
1957-70	2.0	-	1.2	1.2		2.0	—	—
1957-71							1.0	2.1
1957-72						1.7		
1963-70	3.7		2.5	2.6				
1963-71						4.0		
1963-72	4.5					3,1		
1965-71							2.2	3.4

II. In Value Terms Sources of Estimates

	Reconstructed Official	Liu-Yeh
1952-57	4.3	1.7
1957-70	5.0	2.6-3.3

Sources: Most of these estimates are obtained from A. Eckstein's "Economic Growth and Change in China: A Twenty-Year Perspective" in 'The China Quarterly, Vol 54, April/June 1973. Rawski's estimates are obtained from "Recent Trends in the Chinese Economy" in 'The China Quarterly, Vol. 53, January/March, 1973. Perkin's estimates are derived from "Looking Inside China: An Economic Reappraisal" in 'Problems of Communism, May-June 1973. T. C. Liu and K. C. Yeh's estimates were given in "The Chinese Economy at the Present Juncture: Chinese and Other Asian Economies; A Quantitative Eavaluation" in American Economic Association, May 1973

According to a New China News Agency report, the growth rate of cereal production was about 4 percent or 5 percent in the last ten years. I have used their mid-point estimate of 4.5 percent for the period 1963-72 in the above Table 2. Curtis Ullerich* supports it by pointing out that "Chinese agricultural output grew by about 8 per cent in the first half of the sixties, this rate slowly declining in the second half and then possibly stabilizing, for the next decade at around five percent."

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* See his article "Size and Composition of the Chinese G. N. P" in the 'Journal of Contemporary Asia', Vol, 2 1972.

It is evident from the above Table 1 that there is no agreement among most experts regarding the rates of growth of grain production in China during the last twenty years. There is no way to determine the degree of upward and downward biases in the estimates provided by them. However, I believe that most of the estimates may be biased downwards for the following reasons :

First, since liberation in 1949, China has made tremendous advances in soil conservation, erosion control, water conservation, land reclamation, land reform, etc. These improvement schemes are likely to raise production of grain output significantly. Nevertheless, the estimates in the above Table do not consider the impact of these reforms in most cases. Second, as Curtis Ullerich puts it, "China's agriculture has been using high-yielding grain varieties for about 10 years now. We know that in India the introduction of high-yielding wheat varieties has increased the per hectare yield of those acreages planted with them from 1.8 to 4.5 tons on average within the span of 3-4 years. We know further that the first experiments with high yielding seed varieties in India were started in 1959/60 while as early as 1962 the Chinese National Academy of Sciences reported on ten years of scientific and practical work with high-yielding varieties. China consequently has here an advantage of some 10 years. Is it credible that whereas in India the same high yielding varieties have boosted the national harvest by about 20 per cent in three years, in China they have produced no effect whatsoever ?"

Third, Chinese sourcee are claiming that the aftermath of the Cultural Revolution has been witnessing in both aggregate and per capita food supplies which presupposes substantial growth of grain output.** The Western sources refer to the continuing Chinese imports of food grains, which represent an expenditure of nearly $ 500 million

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** "The excellent food situation of our country also finds expression in the urban and rural people and a steadily rising level of consumption of food...Due to foodself-sufficiency on a national scale, the national reserve grain stock has surpassed the highest level of history. An unceasing increase is also noticeable in the collective grain stock at the commune and the reserve grain stock of individual commune members." and brigade level Even the Assessment (U.S.A.) reports that "the two years 1970-71 on the whole saw small but definite increases in household consnmption. The quality, variety and availability of food gradually improved."

(People's Daily, 1 Oct, 1971)

annually in hard currency and hence claim that China is still not self-sufficient in food grains. These sources tend to forget that it is more economical for major coastal cities, such as Shanghai and Tientsin, not to receive their grain supplies from China's surplus producing areas because of the lack of internal transportation and communication facilities.

Fourth, China has become not only a supplier of large quantities of rice under long-term trade agreements to such countries as Sri Lanka, Cuba, Algeria, North Vietnam, N:L.F and the Pathet Lao, but also she furnishes wheat to Egypt, Algeria, Syria, Yemen, Guinea, Albania and Iraq. Both the grain purchases from abroad and food aid by China have paid handsome political dividends.

Finally, China wants to accumulate a large inventory of the national reserve grain stock as reserve against a "rainy day" or any "preemptive strike." In 1969 the following instructions were diffused throughout the country. "Be prepared for war, be prepared for natural disasters and do anything for the people." This is also summarized in the slogan "Store up grain in case of war." Ever since the National Program for Agricultural Growth of 1958 it had been laid down that each cooperative should set aside enough wheat for three months, six months, a year or a year and a half. The State must have reserves for one or two years. In recent years the commune and production brigade reserves have been reaching about 8-9 per cent of the annual total production.

Now, let us come to the rate of growth of industrial output in China during the last two decades. The much greater variety and complexity of Chinese industrial output composition makes our task of accepting any particular estimate as reliable rather difficult. China's highly sophisticated nuclear and space technology exists simultaneously with very small units of intermediate and low-technology in the handicraft industries, many of which do not seem to have any systematic data at all. This necessarily limits the reliability of the estimates in the following Table 2, which indicates the average annual rates of growth in industrial production in China since 1952.

It is clear from Table 2 that almost all sources agree that the average annual rate of industrial output growth was between 18-27 percent for the period 1952-1959 and consequently we can safely affirm that for this period China's industrial growth rate exceeded virtually all other countries in the world. There is some disagreement about Chinese performance during the sixties.

Table 2

Average Annual Rates of Growth in Industrial Production in China (a, b, c, d)

(in percentages)

Years	Sources of Estimates								
	Official	Chao	Liu-Yeh	Field	State	Richman (b)	Cheng (d)	Perkins	Rawski
1952-57	18.0	13.5	19.1	14.3					
1952-59	27.0	19.0	21.0	18 0					
1952-66	13.5			8.4		9.7-10.	13.4		
1952-70				8.3	8.0				
1957-65	11.0					4.6-5.3			9.0-108
1957-66	11.0			6.2	6.8	5.5-6.5	11.0		
1957-70	9.0(d)			8.6					
1957-71									9.4-10.4
1957-72								8.0	
1959-66	1.4			0.6	1.3				
1965-71									9.9

(a) Strictly speaking these sources are not comparable. For example Field's index includes both factory and handicraft industries, while Rawski's estimates include only factory industries. Richman's estimates cover manufacturing, mining and public utilities.

(b) B. R. Richman's estimates are obtained from his book, 'Industrial Society' in Communist China, Randon House, 1969 p 598 Table 7.1

(c) Chou-En-Lai gave the figure of $ 90 billion as total gross value of industrial output to American newsman Edgar Snow. This figure suggests a growth rate of 9 per cent per year for 1957-70, although it is not clear whether the figure was calculated in current or constant prices.

(d) Chu-yuan Cheng's estimates are from his book, 'The Economy of Communist China 1949-1969', University of Michigan, 1971.

The Assessment (State Dept. U.S.A) estimated that the average annual rate of industial production in China during the years 1949-70 was 11 per cent for the entire period, but was 8 per cent if the first 3 years of abnormally high growths were excluded. However, the lack of any supporting evidence makes us very sceptical about these figures, which are sometimes crude guesses rather than careful estimates.

Estimates of Perkins, Richman, and Field are implausibly low. Rawski's estimates appear more realistic, although one may argue that even he underestimated the recent growth of the industrial production in China. Recently a more realistic appraisal has come from the *Economist of Japan**, which estimated that China's growth rate in the years from 1961 to 1966 had been constantly well above 10 per cent, reaching and topping 20 per cent in 1965 and 1966. *The British China Association*** reported the same figures, adding that according to its sources, industrial growth in 1964 was 19.9 per cent.

It is true that this high growth rate of early sixties was somewhat reduced during the Cultural Revolution years of 1967 and 1968 but whether it ever decreased to a level suggested in the above estimates of Table 2 is questionable. Curtis Ullerich makes a more realistic analysis in saying, "We remain, therefore, safely on the lower side of reality if we assume a long-term expansion rate of 12 per cent over the last ten years". In the circumstances, Eckstein's estimate of 8 per cent per annum for the period 1959-70 is very low.

However, in my present study, I have used the conservative estimates of Tables 1 and 2 to represent the rates of growth of agricultural and industrial production in China since 1950. This is partly because it is difficult to derive more realistic data on the basis of available information and then substantiate our view that the data used in other estimates are rather low. Also, it seems that Mao's China may not be interested in economic growth per se. Hence for the sake of convenience, we deliberately use the conservative estimates of agricultural and industrial growth rates in China.

We have used three different methods to estimate the rate of growth of any item, according to the availability of data for that selected item. First, if any continuous time series data are available, we have used a semi-log linear equation, log $Y_t=a+bt$ to the data, where Y, a, b and t represent production of any item, a constant term, the percentage rate of growth of that selected item and time respectively. Secondly, when continuous data series are not available, we have used a simple arithmetic average of the annual rate of growth, which has been represented by the following

$$\frac{1}{n}\sum_{1}^{n}\frac{Y_{t+1}-Y_t}{Y_t}\times 100$$

where n represents the number of years for which data are available. However, it is granted that this second method is less raliable than

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* (Tokyo, 8 July, 1967)

** (UNI, London, 28th May, 1966)

(Continued on page 75)

"Learning by Doing" and the System of Production-Education Mix in China

Fu-Sen Chen*

More than ten years have elapsed since the first appearance of the path-breaking paper of "Learning By Doing" [2] published by K. J. Arrow, the Noble Prize laureate. Numerous articles have either examined or developed the properties of this model based originally on the observation of the pattern of airframe production. Although extensions of this model have widely stretched from the study of infant industries to athletic performance [9], much work still remains to be done on its applicability to the performance of the Chinese economy. The purpose of this paper is to investigate the similarities and divergences between this theory and the mode of production in China guided by the thought of Mao Tse-Tung. Far apart the fundamental philosophies may well be, comparable basis for the style of production can still be found.

1. A Brief Survey of the Theory of "Learning by Doing"

As early as in 1936, T. P. Wright, an aeronautical engineer observed that the number of labour-hours spent in the production of an airframe (airplane body without engines) decreases as the total number of airframes of the same type increases. Later in 1956, Asher found on this basis a fundamental relationship in the production and cost planning of the United States Air Force. Hirsch and other works have also shown the existence of this basic technological rule. The term "learning curve" or "progress ratio" is often used to refer to this phenomenon. A very similar technological phenomenon was found by Lundberg. The Horndal Iron Works in Sweden had no new invest-

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** I am grateful to Dr. K. J. Charles for his valuable comments. The errors which remain are the author's sole responsibility.

ment (and therefore presumable no significant change in its methods of production) for a period of 15 years, yet productivity (output per man hour) rose on the average close to 2 per cent per annum. All these findings indicate that the steadily increasing performance of workers can largely, if not solely, be imputed to learning from experience. Having briefly cited these empirical studies, Arrow [2] advanced a major hypothesis that technical change in general can be ascribed to experience in addition to the assumption that technical progress can be ushered in by gross investment. Upon these basic propositions, a rigorous and elegant model was formulated in the manner similar to a neoclassical production function which is later termed as "the pseudo-production function". Arrow's fellow-economists have further found that the efficiency of the employed labour force will be increased in spite of the fact that technical progress is bred by gross investment alone. A problem of distribution thus arises: Who are supposed to receive the proceeds of technical progress, the employed or the private investors ? In the case of a competitive economy in which we are living, Arrow and his followers have stated that, if workers have first received the fruit of technical progress, then the private investors should be indemnified with the technical gains in order to encourage them to proceed with investment.

2. An Interpretation of Mao's Thought on Production

We shall now strive to interpret Mao's way of thinking on production in terms of the terminology often applied to the competitive economy. It is doubtless a difficult task to equate the two branches of linguistics linked with the basically different philosophies. However, the mission is not quite insurmountable, or is at least worth-while to proceed with. Objections to our interpretation may conceivably arise probably to a considerably lesser degree than what had happened in China when a number of different interpretations of Mao's thought led to a good deal of civil strife during the havoc of the Cultural Revolution.

It seems to us that Mao stresses the experience of the working force and his concept of production or productivity is the total development of man. In his words :

> "The masses have boundless creative power. They can organize themselves and concentrate on places and branches of work where they can give full play to their energy ; they can concentrate on production in breadth and depth and create more and more welfare undertakings for themselves".*1

Further,

> "To be able to carry on their production and studies effectively and to arrange their lives properly, the people want their government and those in charge of production and of cultural and educational organizations to issue appropriate orders of an obligatory nature".*[2]

Furthermore, speaking on the "Correct Handling of Contradictions Among the People" in 1957, Mao said :

> "Our educational policy must enable every one who receives an education to develop morally, intellectually, and physcially".*[3]

The quotations suffice to trace out the mainstream of Mao's thought on production which is an all-embracing mix of physical output, education, intellectual exercises, and moral development, a concept well beyond the subject-matter economists ordinarily pursue. In what way then can we contrast the theory of "Learning by Doing" circumscribed in physical productivity and technical progress to Mao and his followers' blue-prints of production in China? We shall consider this in the next section.

3. Some Example of the Educational and Technical Training System in China—"Learning by and after Doing"

In the absence of precise and complete picture of what is going on in China, we have to select, on the basis of what is commonly termed as 'China-feel", the second-hand information piecemeal in nature. The Maoists' contemplation of "Learning by, and after, Doing" will substantially be revealed in the following report.

Far East Trade and Development in April, 1969 issued a report on China's reformed educational system. The system was introduced due to the fact that a number of new products have been developed by technicians of worker origin. Aim of this reform is to bring education close to grassroots. To support this, an example was given. Workers in Shanghai Machine-Tool Plant (abour 45 per cent of its 600 engineers and technicians come from the shop floor) who specialize in making high-precision grinder have designed such products as the universal cylindrical grinder and the high-centre cylindrical grinder. Working-class technicians and designers were responsible for six of the ten new type high-precision grinders developed in the first half of 1968. It was also stressed that many of the workers have had at least ten years experience as fitters, lathe operators, and foundry workers. Apparently, "Learning by Doing" in terms of workers' *experience was emphasized, though* the efficiency of labour augmented *by gross investment was not singled out. One can well imagine that* there would be no tools for the workers to experiment on new invention, if there were no gross investment, the fund of which in this case conceivably does not come from the private investors.

It was further stated that the majority of the technicians of worker origin are now the technological backbone of the plant ; the man who made important contributions to the development of China's first mirror-smooth surface grinder, Chang Mei-hua, was originally a grinding-machine operator. Therefore, "worker-technicians have accumulated a wealth of experience at the bench. After a few years in spare-time general or technical schools, they are able to link theory more closely with practice, and are able to do scientific research and designing on their own". This sample in conjunction with others substantiated the establishment of a higher education system announced in September, 1970 by An-Huei Radio Station [15] : "The admissions to universities and colleges after the Cultural Revolution will be based, among other criteria, on richness of practical experience, of workers and peasants irrespective of age and educational standard (*translation mine*)", a remarkable advance from "Learning by Doing to "Learning after Doing". By "Learning after Doing" is meant not only learning from repetitive performance of tasks but also learning from mistakes and errors arising from experiments.

4. Rural Development and the Communes

Of particular interest is the extension of the concept of "Learning by and after Doing" to the development of farm industries some aspects of which, as the present writer sees them, are especially apt to the rapid improvement of peasants' productivities as their experiences grow. As far back as 1969 and 1970 [16, 17], China reopened its agricultural drive. The program seeks first, to increase farm output and the number of small and medium-sized industries in the country-side ; secondly, to broaden the skills of rural people through expansion of part-work, part-study schooling and through the utilization of the skills of 25 million urban dwellers sent to the countryside ; and thirdly, to expand roads, waterways, telecommunications, irrigation, water-control system and elementary health services. Industries run by the country government were reported able to make lathes, pumps, electric wire, etc., while communes and brigades were stated to supply farm implements, pump parts and hand tools. Particular emphasis is placed on water conservation and land reclamation; projects of this nature together with aforesaid programs will certainly make use of human resource in a most effective way. If we are permitted to apply the technical jargons in "Learning by Doing", the policy of re-opening the agricultural drive surely aims at improving peasants' experience at a rapid pace, at augmenting labour-efficiency at an optimal rate, and at achieving the highest possible social rate of return in the rural area. One point to which we should direct our attention is the role of urban dwellers sent to the countryside. We may, at this stage, offer a tentative interpretation, namely, the transfer of the urban dwellers to the rural area purports in two ways: To learn the farm production while doing; and to bring to the rural area the services which it previously lacked.

To further verify the thesis that the development of rural area (in which communes constitute the major base) is particularly suited to the process of "Learning by Doing", we may refer to the study (in Chinese) of Anderson Shih [19] at Berkely. Prior to the formation of communes, Mao gained, through a long period of debate and several stages of revisions, the approval of "the Guide-line to Rural Development" (*translation mine*), which later on is called "The Eight-Words Constitution of Agriculture"—water, fertilizer, earth, seeds, plantation, conservation, tools, and management (*translation mine*). These "Eight Words" emphasize a policy which can readily be viewed as an astute application of "Learning by Doing". In Shih's articles, the pictures and examples of the communes that appear to succeed in production are mostly in the area of reclamation, the plantation of coffee and vegetables, the sericulture industry, and the duck husbandry. In all these types of farming, experience is not merely important but is also apt to improve as output increases. We do not, however, pretend to ignore the disastrous effect of the production of steel in the furnace at the back yard reported to the world outside China; this special case should be properly termed as "Doing without Learning."

5. The Problem of Productivity and Concluding Remarks

It is natural to raise a question as to the physical productivity in the rural area in China when massive urban dwellers participate in the farm production. Would not the productivity be substantially reduced due to the influx of the inexprienced new-hands at least for a reasonable period of adjustment? It is highly likely to be the case. In addition to many unsubstantiated reports coming out of China, Liu-Yeh's quantitative study[*4] of the gross domestic product of the agricultural sector has in their estimate shown a slight decline from 1967 to 1970. Nevertheless, we may look at the problem from yet another angle. As the writer has interpreted in Section 2 that Mao's concept of production is an all-embracing mix of physical output, education, intellectual exercises, and moral development. The urban dwellers may well bring about the knowledge of health care, services of midwives and medical doctors, diffusion of technical know-how in the sense of "Learning before Doing", and intellectual stimulation in terms of teaching and mutual discussions guided by the *correct* Mao-Tsi-Tung's thought. If bourgeois influence can be eliminated from the above mentioned services then the gross domestic product of the agricultural sector would have to include a part of measurable as well as immeasurable service-output which might well out-weigh the decline of the physical product stemming from the maladjustment. As far as the productivity of the communes is concerned, the question remains as a puzzle in view of the not well defined concept of Mao's, the lack of detailed statistical data and, in particular, of the lack of a measuring method that can quantify, along the *correct* Mao's line, the all-embracing mixture of output.

Setting aside as the backbone of economic analysis the philosophical confrontation which, if carried on, would probably last forever, we can conduct the comparison purely at the technical level, namely, in relation to the emphasis on the mode of production. There exists a remarkable degree of similarity between the model of "Learning by Doing" and the de facto policy of Mao's China.

Mao, the great teacher, is conceivably not aware of what has been going on in the development of modern economic models in the western world ; while Arrow, a great scholar, might not have noticed the mode of production in China. It is interesting to note, however, that there is a striking resemblance between the theoretical model and the economic experiment in China. It would not be inappropriate to say that Mao independently sensed the significace of "Learning by and after Doing" as the technical rule for the development of China. If this is the clue to Mao's line, then this aspect of China's development strategy deserves the attention of developing countries, regardless of their ideological affiliations.

Footnotes

*1 [14], p. 119. A quotation from 'Introductory Note to "Surplus Labour Has Found a Way Out" (1955).

*2 [14], p. 52.

*3 A Second-hand quotation from [8], p. 230.

*4 [13], p. 218.

References

1. Alchian, A.: "Reliability of Progress Curves in Airframe Production", 'Econometrica, 31, (Oct., 1963), 679-693.
2. Arrow, K. J.: "The Economic Implications of Learning by Doing", 'Review, of Economic Studies, XXIX, (June, 1962), 155-173.
3. "Classificatory Notes on the Production and Transmission of Technological Knowledge", 'American Economic Review,' LIX, (May, 1969), 29-35.
4. Berger, Roland: "China and the Green Revolution", 'Eastern Horizon, Vol. X, No. 1, 22-25.
5. Chen, Fu-Sen; "Technical Adventures, Technical Heritage, and the Rate of Technical Progress", 'Metroeconomica, Vol. XIII, No. III, (September-December, 1971), 227-232.
6. "Learning by Doing" as a Non-homothetic V.E.S. Production with Variable Physical Life-Length of Capital: A Static Analysis of the Problem of Unemployment". Listed in 'the contributed paper program,' European Econometric Meeting, Oslo, Norway, (September, 1973).
7. Book Review on 'China in the Year 2001' (By Han Suy-In), 'Canadian Dimension,' Vol. 5, No. 4, (May, 1968), Winnipeg, Manitoba, Canada.
8. 'Far East Trade and Development' (April, 1969),
9. Fellner, W.: "Specific Interpretations of Learning by Doing". 'Journal of Economic Theory, 1, (August, 1969), 119-140.
10. Levhari, D.: "Further Implications of Learning by Doing", 'The Review of Economic Studies', XXXIII(1) (January, 1966), 31-38.
11. "Extensions of Arrow's Learning by Doing", 'The Review of Economic Studies', XXXIII(2) (April. 1966), 117-131.
12. "Learning by Doing Once Again", 'Metroeconomica', XXI (April, 1969), 58-70.
13. Liu, Ta-Chung and Kung-Chia Yeh: "Chinese and Other Asian Economies; A Quantitative Evaluation". 'The American Economic Review', Papers and Proceedings, Vol. LXIII, No. 2 (May, 1973), 215-233.
14. Mao Tse-Tung: 'Quotations From Chairman Mao Tse-Tung'. Foreign Languages Press, Peking, 1966.
15. 'Ming Pao Monthly, Vol. 5, No. 9, (Hongkong, September, 1970), p. 68.
16. 'The New York Times' (11th January, 1970).
17. 'The New York Times', (Sunday November 2, 1969).
18. Sheshinski, E.: "Optimal Accumulation with Learning by Doing", in Karl Shell (ed.), 'Essays on the Theory of Optimal Economic Growth'. M. I. T. Press, 1967, 31-52.
19. Shih, Joseph Anderson: "A History of People's Commune, Chap. 7" (in Chinese), 'translation mine', 'Ming Pao Monthly, Vol. 7, No. 6, (Hongkong, June, 1967), 95-99.
20. "A History of People's Commune. Chap. 8," (in Chinese), 'translation mine', 'Ming Pao Monthly', Vol. 7, No. 7, (Hongkong, July, 1972), 28-32.
21. "A History of People's Commune, Chap. 8," (in Chinese), 'translation mine', 'Ming Pao Monthly', Vol. 7, No. 8, (Hongkong, August, 1972), 85-88.
22. Soloman, Richard H.: "The Chinese Political Culture and Problems of Modernization", Center for International Studies, Massachusetts Institute of Technology, Cambridge, Mass. U.S.A.
23. Wu, Yuan-Li: "Economics, Ideology and the Cultural Revolution", 'Asian Survey', Vol. VIII, 1968, 223-235.

The Impact of Inflation on the Rural Poor of West Bengal

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In West Bengal as many as 75% of the people live in rural areas depending totally or partially on agriculture. This is why the problem of land reforms has attracted the notice of the government for sometime and some land reform measures have been adopted with a view to improving the economic conditions of the rural people. In some districts of West Bengal such as Howrah, Burdwan, Hooghly and 24 Parganas some people have been employed in industrial concerns, but in the rest of the districts which are not industrially advanced the people have to depend solely on agriculture. This will be evident from the following facts: The percentage of labourers engaged in agriculture is 30.3 in Howrah, 53.8 in Burdwan, 54.4 in Hooghly, but this is 78.7 in Birbhum, 80 in Bankura, 79.3 in Midnapore, 74.2 in Murshidabad, 78.4 in Purulia, 79.1 in Maldah, 82.6 in Coochbehar and 85.9 in West Dinajpore. On average 70.6% of the labourers in West Bengal are engaged in agriculture.

In the last twenty years the agricultural production in West Bengal has been almost doubled. As a result of improved system of irrigation, supply of different types of manures, insecticides, scientifically preserved seeds, an enormous increase in agricultural production has been possible. Agriculture is no longer a losing profession but it has been sufficiently remunerative. So many people who did not pay attention to agriculture previously are now engaged in agriculture for higher profits. But who are benefited from agriculture ? Only a few rich peasants who are much benefited. It is easy for them to get manure, seeds and agricultural implements with the help of the government for the relation with the government is in their favour. The small peasants and the landless agricultural labourers are not directly benefited by the agrarian revolution which has occurred in the state.

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The number of small peasants, bargadars and landless peasants has increased significantly since 1961. Since that time the number of agricultural labourers has increased more than 10 lakhs and the number of landless peasants has been doubled. According to the estimate made by the Land Revenue Department of the Government of West Bengal the number of peasants possesing 60 bighas of land each is 53000, the number of landless peasants is 3200000, the number of small peasants possessing land up to 9 bighas is 4000000 and the number of peasants possessing land from 9 bighas to 60 bighas is 400000.

The peasants possessing more than 50 bighas of land sell a sufficient amount of paddy after maintaining their families. So they can get a sufficient amount of money as the price of rice and paddy is very high now. The peasant possessing land from 30 bighas to 50 bighas after maintaining their families can sell some surplus products in the market, those possessing land less than 18 bighas cannot produce sufficient agricultural products required for maintaining their families for the whole year. They are required to purchase food grains from the market for 2 to 6 months in a year. But the 3200000 landless agricultural labourers and 4000000 small peasants sell major portion of paddy and wheat obtained by them immediately after the harvesting season for the repayment of debts previously incurred and for the purchase of necessary commodities. Soon their stock of provision for the maintenance of their families is exhusted and they try to purchase foodgrains in the market by earning some money as day-labourers. But there is no guarantee that they will be able to earn some money every day. So some times they are to pass their days through semi-starvation or utter starvation.

The rich peasants having sufficient surplus stock of food grains are selling it at a very high price, even paddy at Rs. 80.00 a maund and it is not therefore difficult for them to maintain themselves at the time of heavy rise in prices· of all essential commodities. But what about the poor people living in villages who are to purchase food grains and other necessaries of life ? At present the prices of all commodities, especially of those which are unavoidable for keeping body and soul together have recorded an enormous rise, the like of which has never been experienced in this country. In the face of this unprecedented rise in prices the poor landless and small peasants in the rural areas are very hard hit. The villagers of the industrial areas can earn some money from their employment in factories. But those people living in nonindustrialised rural areas and having no sufficient landed property can hardly get employment for 5 months in a year; 3 months in the agriculture and 2 months in other rural area. As a day labourer his salary per day does not exceed Rs. 3.00 or Rs. 1.50 in cash plus a tiffin plus a mid day meal. Let us take it for granted that the man in question has a planned family consisting of the couple and three children. But in most of the cases, in actual practice, the family of such a person is much bigger than a planned one—eight or nine children of a landless person can be seen very often. However, Rs. 3.00 which he earns per day when he is employed (his earning is nil when he has not the scope of employment) can enable him to purchase one kilogram of rice at the present price prevailing in many places of the state. What can he do with this amount of rice? If he has a planned family consisting of only five persons, he is to provide 10 meals plus 5 tiffins in the morning and at least 3 tiffins for the children in the afternoon, which require at least 3 kilograms of rice and atta. Only rice or atta is not sufficient to provide meals for the members of his family—many other commodities such as oil, spices, vegetables, etc. are required. How can he purchase these commodities which are now being sold at at an exhorbitant price? There is the problem of clothing for the members of the family. The price of coarse cloth has doubled in course of six months. A piece of napkin which is the standard dress of many villagers even now, costs Rs. 3.00 or more. How can the poor peasant manage to buy spices or napkins for himself, 3 pieces of very coarse saris for his wife and at least two sets of very simple dresses for each of his children, which will cost him at least Rs. 100.00 per year? In addition to this there is the necessity of winter-dresses. Besides these, there are medical expenditures, many incidental and social expenditures which cannot be avoided, consequently, these people are gradually being ruined. They have sold their utensils, bullocks and cows and the little amount of landed property possessed by them. When all the rice producing land is sold, it is not uncommon that they begin to sell there homestead land. Thus a large section of the rural people is gradually being ruined day by day in the face of the continuously rising price level to an abnormal height.

The West Bengal Government has made arrangements for distributing surplus land to the landless peasants. But a small slice of land is of little importance to them. They have not the sufficient money to cultivate the land properly. So the yield per acre of land cultivated by the landless peasants is much less than what it was when it was cultivated by the previous owner. Moreover, the landless peasants will certainly sell this land whenever he has a permanent right over it. Because they cannot be expected to hold the land even when his half-naked or stark naked little children reduced to skeleton cry for food in hunger. It is planned by the government that the landless peasants or peasants possessing a small amount of land will be given permanent right on the khas land allotted to them but they will not be able to sale that land. But it is said that a peasant can exchange such a plot of land for another piece of land possessed by another peasant on the basis of this provision. What many peasants are doing is this : A peasant now sells his own rice producing land or even homestead land to another person in order to purchase food grains and other necessaries for life. Later on he will take back that land from the purchaser in exchange of the khas land which is allotted to him. Thus the little amount of land which a peasant gets will be sold away under the heavy pressure of wants within a short time and the landless will remain landless.

Thus very horrible is the picture of rural West Bengal, particularly in the non industrialised areas. Such families as have not got any food for 2 or 3 days continuously are not rare. As a result of malnutrition these people suffer most often from various diseases and get little or no medical treatment. Number of beggars is increasing enormously in the rural areas but very few people have the ability to give alms to so many beggars. There are many families who have nothing to fall back upon except begging.

Those who are in service either in the government or in the private sector raise their demand from time to time for increasing their wages or salaries or dearness allowances in order that they may be able to maintain their standard of living in the face of continuously rising price level. The government accedes to their demand having an easy recourse to printing press for deficit financing. The consequence is a further rise in prices which in its turn leads to a further demand for higher wages. Thus there is a vicious wage-price spiral. The private sector raises the wages of the employees and recover the additional expenditures by increasing the prices of the products produced by it. The rise in prices as a result of deficit spending and imposition of indirect taxes mainly in the form of excise duties by the government and deliberate enhancing of prices by the private sector, all people, employed and unemployed are equally hard hit. If it is taken for granted that those who are employed can bear the burden of price rise, how can the landless rural people having no employment and income worth mentioning bear the unbearable burden of the unprecedented price rise ? The price which has occurred now is the highest ever recorded in the country. The prices of some necessaries have been doubled or even trebled in course of the months. As for example, a prece of cloth which cost Rs. 5.50 or Rs. 6.00, now costs Rs. 11 or Rs. 11.50. This is about the cloth of coarse variety which is consumed by the rural people. The same is the case with all other necessaries including food grains. Rice now sells at Rs. 3.00 per kilogram in many rural areas of West Bengal while it is less than Rs. 2.00 in Orissa and wheat has now been a rare commodity the price of which is not much less than that of rice. The most astonising incident about the food grain price is that powdered maize is now selling at Rs. 1.90 per kilogram. Whenever a poor peasant gets some money he purchases this commodity which is now the staple food of many families in West Bengal. The people do not get this commodity in sufficient quantities. When a family consisting of, say, 5 persons including children manages to purchase ½ kilogram of this food the mistress of the family boils it with sufficient water and prepares a gruel which is distributed among the members of the family. Leaving aside the questions of quality, the quantity of this food also is not at all sufficient for the people who take this food after one or two days of starvation. The modified rationing system in the rural areas is on the verge of falling--the amount of food grains obtained from the ration shop by a family is hardly sufficient to provide it with two meals in a week. Again there is the problem of purchasing power with the rural people. How can they manage to purchase the food grains from the ration-shop ? Many of them who have the hope of getting some paddy in the future borrow money from others on condition that the amount will be repaid in terms of paddy at a price of Rs. 20.00 or even less in Jannary next though the market price of paddy at that time will be much higher.

With every decrease in the allotment of food grains distributed through the ration shop there has been an abnormal jump in the price of food articles in the market. The astonishing phenomenon which is being noticed this year is that even when the high yielding varieties of paddy was harvested by the first week of October and the supply of paddy sufficiently increased in the market the price of this commodity went on increasing. The price of paddy is different at different places being gradually higher in places nearer to Calcutta. The amount of paddy harvested in October is not quite insignificant. As far as I know, a single village in Midnapore district sold not less than 1500 maunds of paddy in October last. There is sufficient supply of paddy and rice in any market place in many localities of this state. But the price rise is unhindered. The law of supply and demand fails to explain this peculiar phenomenon.

The people in the rural areas of West Bengal are heavily immersed in debts incurred from the government from time to time. On the hypothecation of the single plot of land possessed by a family, the head of the family has borrowed from the government on many occasions. Beginning from the United Front ministry, no government in the state has ever thought of realising the debts from the people lest they should be unpopular and fail to secure the support of the people in the next election. The burden of the debt on a person is so heavy now that it is not at all possible for him to repay it at any time. Thus the condition of the agricultural population that they are born in debt, live in debt, and die in debt which was said to be applicable in the British regime, still holds good.

This paper is just an analysis of the condition of the poor people living in rural areas of West Bengal. No attempt has here been made to analyse the causes of this phenomenon and no remedial measure has been suggested. It is evident from the analysis that a large section of the rural people in West Bengal has got no benefit of development planning. Moreover, their economic condition under the pressure of inflation and indirect tax burden has been worsened. So the number of underfed people in the rural areas is gradually increasing and this is quite evident to any observer who observes the situation with eyes open.

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INDEX NUMBERS OF WHOLESALE PRICES (Base : 1961-62=100)

	Week Ended	
	15. 12. 73	16. 12. 72
I. Food Articles	299.0	244.6
(a) Food Grains	304.4	249.7
(i) Cereals	277.1	225.8
(ii) Pulses	427.6	357.2
(b) Fruits & Vegetables	277.1	211.3
(c) Milk & Milk Products	290.1	229.0
(d) Edible oils	345.2	248.9
(e) Fish, Eggs & Meat	335.4	292.0
(f) Sugar & Allied Products	280.9	292.4
II. Fuel, Power, Light & Lubricants	234.9	181.4

Economic Integration Among Developing Countries with Special Reference to South-East Asia—II

B. S. Sreekantaradhya*

Fourth, the movement towards comprehensive integration in developing economies is not smooth because these countries lack experience in economic cooperation. In most developing countries and especially in the countries of the South-East Asian region, there is little economic interdependence and cooperation in economic matters has begun only recently.

Lastly, the existing transport, banking, marketing and other arrangements are not quite conducive to bring about integration quickly. These arrangements with the developed countries are fairly well developed ; but among themselves they are not well developed. Unless these arrangements among themselves are well developed, the developing countries cannot bring about economic integration.

III

Though there is a theoretical justification for integration among the developing countries of South-East Asia, comprehensive integration is not possible at present because of the problems mentioned above. However, there are possibilities of partial integration and some schemes of partial integration are already being attempted; These attempts are of great significance from the point of view of removing the obstacles to comprehensive integration. The importance of such efforts could be better understood if we look at the fact that the success of European economic integration is due to the fact that several arrangements for economic cooperation were being made long before the implementation of full scale integration schemes and a lot of experience had been gained in this process. It is by now an established fact that partial integration is the right step for the South-East

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Asian Countries for the time being.[19] The experts of the ECAFE working group on Regional Economic Cooperation observed that they are convinced that "while the complete removal of quantitative restrictions and tariffs within the region was not feasible, less far-reaching measures of trade liberalisation were not only practicable but also would greatly benefit the participating countries by bringing about substantial increase of intra-regional trade."[20] Therefore keeping fuller and wider economic integration as a long-run goal, less far reaching *ad hoc* and functional type of integration, having the following schemes, is suitable for gaining experience and for clearing the way for fuller integration in future :

(1) Adoption of a regional investment policy is one of the possible means of establishing regional integration in South-East Asia. To avoid the unnecessary multiplication of small and uneconomic units, especially in the import-substituting industries, it is necessary to plan investment on a regional basis. Studies conducted by ECAFE have indicated the possibilities of adopting a regional investment policy by the South-East Asian countries with very great benefit. In 1967 ECAFE organised a survey covering the Philippines, Indonesia, Singapore, Malaysia, Thailand and Taiwan to explore the possibilities of establishing integrated steel plants in most economically feasible sites in the region. To quote Motonaga Chto, "The survey mission concluded that the potential market and resources in South-East Asia were sufficient to justify the establishment of a few integrated steel projects in this sub-region, and the six countries indicated their unanimous approval of the recommendations by the mission and their willingness for a united effort in the promotion and development of the iron and steel industry."[21] Joint planning is found to be feasible in automobile and household appliances industries. Investment planning on a regional basis holds out the promise of being a forerunner to the schemes of comprehensive integration in future.

(2) Trade Cooperation is perhaps the most important policy measure in bringing about integration in South-East Asia. Trade cooperation can be in various forms like commodity agreements, bilateral agreements, establishment of regional quotas, etc.

Commodity agreements go a long way in controlling the fluctuations in prices and in ensuring profitable market to the producers. This is helpful also in strengthening the bargaining power of the developing countries for securing a better price for their commodities and for taking suitable measures to withstand competition from close substitutes to the primary products exported by developing countries. The Asian Coconut Community comprising Ceylon, India, Malaysia, Thailand, Indonesia and the Philippines which has very limited objective of taking some measures to develop the industry in these countries must actually arrange for an International Coconut Agreement which would avoid fluctuations in prices, provide guaranteed market and enable these countries to withstand competition from close substitutes to coconut products. Similar arrangements in respect of various primary commodities is possible from the point of view of increasing the gain from their trade with the developed countries.

Another area of trade cooperation is bilateral trade agreements. As pointed out by the ECAFE working Group on Trade Liberalisation, bilateral trade agreements could be of two types[1]—

(1) Simple expression of mutual friendship and interest in the development of bilateral trade.

(2) Commitment to purchase from each other a specified value of listed goods over a stated period. Measures of this kind will have the way for comprehensive integration in future.

(3) Establishment of regional aid institutes is another step in the preparatory work for bringing about comprehensive integration in future. The Asian Development Bank with its headquarters in Manila has been playing an important role in promoting economic cooperation in Asia. It is necessary to take concerted measures to further strengthen this organisation and to consider the need for and the possibilities of establishing more organisations of similar kind specialising in financing certain activities and promoting cooperation in specific fields within the region.

(4) Poor transport system, as discussed earlier, has been an obstacle to regional integration in South-East Asia and therefore a concerted effort with the cooperation of all countries in the region is necessary to develop the transport system which will play a key role in improving the trade relations between different countries in the region. The Asian Highway project started in 1960 is a good attempt in this direction. The formation of a joint shipping line was also under consideration with the active cooperation of ECAFE, but it is not being taken up. Though there are many difficulties in establishing a joint shipping line, such a project is very useful from the point of view of improving the transport system in the region.

(5) Cooperation on project-to-project basis is another modest form of regional integration in South-East Asia, which has been proved

to be possible. There are already a few regional or sub-regional projects covering most parts of Laos, Vietnam, Cambodia and the North-Eastern part of Thailand for the systematic development of hydro-electricity, irrigation, nevigation, flood control, etc., are the best examples for this kind of cooperation.

(6) Payments arrangements within the region are possible and they are absolutely essential for promoting intra-regional trade. Even if there is trade liberalisation, good results in trade expansion cannot be expected unless trade liberalisation is accompanied by payments arrangements which may be of two types—(a) clearing union and (b) payments union. In the case of a clearing union, the costs involved in foreign payments are very much reduced as the transactions are simply recorded and settled finally at the end of the year or at the end of a specified period. But it provides no credit facilities for finally settling the payments. A payments union, on the other hand, provides also credit to cover the deficit and therefore this kind of payments arrangement is very helpful for expanding intra-regional trade. It was, however, recently decided to establish an Asian clearing union on the advice of Prof. R. Triffin and others and this is a right step in the direction of promoting intra regional trade.

IV

To sum up, if integration among developing countries is considered only in terms of the traditional approach, it would be difficult to find justification for it. But the rationale behind integration is made clear by the theory of integration developed in the context of developing countries. Though integration among the developing countries is justified by the reformulated theory of integration, there are several economic and non-economic problems and they make the task of bringing about integration among the South-East Asian countries very difficult. The economic and political conditions prevailing in the South-East Asian countries at present are not conducive to bring about a comprehensive integration among them for promoting trade and rapid development of their economies. Therefore, for the present, slow and cautious approach is necessary in the form of partial integration and there are undoubtedly possibilities, as discussed above, of bringing about partial integration, keeping comprehensive integration as a long-term goal.

References

1. Jacob Viner, The Customs Union Issue, Carnegie Endowment for International Peace, (New York), 1950.
2. J. E. Meade, The Theory of Customs Unions, North Holland Publishing Co. *(Amsterdam), 1966.*
3. Ibid.

4, UNCTAD, Proceedings of the Second Session, Special Problems in World Trade and Development (New York), 1968, p. 24

5. See for examples, Tibor Scitovsky, Economic Theory and Western European Integration, George Allen and Unwin Ltd., (London), 1962.
6. Bhambri, "Customs Unions and Underdeveloped Countries", Economia internazionale, (May, 1962), p. 245. Also see F. Kahnert and others, Economic Integration Among Developing Countries, O.E.C.D. (Paris), 1969. p. 17.
7. M. E. Kreinin, "On the Dynamic Effects of Customs Union", Journal of Political Economy' (April, 1964), pp. 193-5.
8. Op. Cit., p. 23.
9. Ibid.
10. See Bela Balassa, "The Dynamic Effects of Economic Integration with special Reference to ECAFE Region", Regional Economic Cooperation in Asia and the Far East, U.N. 1965.
11. ECLA, La Economia Siderugica de America Latina, 1966, citied in F. Kahnert and others, Economic Integration Among Developing Countries, O.E.C.D. (Paris), 1969.
12. See R. L. Allen, "Integration in Less Developed Areas", Kyklos, (Fasc 3, 1961), pp. 322-323.
13. Ibid., p. 324.
14. R. F. Mikesell, "The Theory of Common Markets as applied to Regional Arrangements among Developping Countries", International Trade Theory in a Developing World, Ed. by Roy Harrod and D. C. Hague, Macmillan and Co., (London), 1965, p. 219.
15. See R. F. Mikesell's citation from J. Tinbergen, Ibid.
16. Op. cit., p. 24.
17. ECAFE, Towards Integration in Asia", Journal of Development Planning, No. 2, (New York), 1970.
18. See Augustin Kintanar, "New Forms of Regional Cooperation in South-East Asia", Regional Cooperation in Asia, O.E.C.D., (Paris), 1970, pp. 43-45.
19. Ibid. p. 45.
20. U.N., Regional Economic Cooperation in Asia and the Far East, Regional Economic Cooperation Series No. 2, (New York), 1965.
21. U.N. Report of the working group of Experts on Trade Liberalisation, Regional Economic Cooperation in Asia and the Far East, Regional Economic Cooperation Series No. 2, (New York), 1965.

(Concluded)

(Continued from page 56)

the previous one because it is likely to be affected by extreme values of bad or good years.

Thirdly, use has also been made of the compound interest rate formula, $F=P(1+i)^n$, to find out the rate of growth i, given the first and last year values of any item together with the number of years n. However, it is admitted that this method is least satisfactory because it is very much dependent on the initial and final year values (P and F) and hence the result is likely to be distorted if either of these values are not normal.

These three different methods are represented as (A), (B) and (C) in Table 3, which indicates changes in the rates of growth of selected items both in India and China between 1950 and 1971.

Table 3

Changes in the Rate of Growth of Selected Items in India and China, 1950-1971

		1950 -51	1955 -56	1960 -61	1965 -66	1970 -71	(A)	(B)	(C)
Population :	India	100	108	120	135	154		2.3%	2.3
	China	100	111	125	137	154		2.1%	2.3
(Assessment)									
Our estimate	China	100	109	119	132	145		2.0%	2%
Agricultural Production :									
	India	100	122	149	139	190	4.5%	2.6%	3.4%
	China	100	140	120	160	192	5%	2.9%	3.4%
(Reconstructed Official)									
Food :	India	100	127	152	134	202	4%	2.6%	3.9%
Grain :	China	100	140	128	154	174	3%	2.2%	2.7%
(Assessment)									
Industrial Production :									
	India	100	143	191	278	324	6.4%	6.5%	6.1%
	China	100	235	519	491	676	11.5-12%	8-8.5%	10%
Cotton Cloth :									
	India	100	131	125	133	124			1.4%
	China	100	176	168	192	340		3.9%	6.4%
(Assessment)									
Electricity (Domestic Use) :									
	India	100	138	219	300	438			7.5%
(Generated)	India	100	164	306	539	930			11.9%
Electricity :	China	100	269	1032	923	1318		12%	14%
(Assesement)									

Nitrogen Fertilizer :									
	India	100	297	482	1240	2904			17%
Phosphate Fertilizer :									
	India	100	109	472	1009	2081			16.5%
Chemical Fertilizer :									
	China	100	608	3571	6428	10571		23%	
Exports :	India	100	99	110	135	233	6.4%	6.1%	4.5%
	China	100	221	316	328	330	7%	4.8%	6.1%
Imports :	India	100	104	175	214	264	7.3%	6.9%	5%
	China	100	281	344	312	367	9%	3.5%	6.9%
Domestic Investment as % of N.Y.	India	5.5	8.0	11.0	13.5	11.3			
Proportion of net domestic investment in net Domestic product									
	China	1952	1957	1961	1965				
		19.8	19.1	16.9	18.0				
Per capita availability of foodgrain :									
	India	100	109	118	102	111			
	China	1952	1955	1960	1965	1968			
		100	105	84	106	105			

Note : The Indian fiscal year runs from 1 April of a year to 31 March of the following year. All Chineas figures relate calendar years 1950, 1955, 1960, 1965 and 1970.

Indian population figures are based on mid-year estimates and are obtained from J. T. Yamaguch's unpublished monograph, "The Demographic Scenario August 1973." Our estimate on Chinese population is also obtained from the same source.

Reconsturcted Official Agricultural production figure are from Ecektein's study, op. cit. It should be noted that the China uses the terms grain and food crops interchangeably. These include wheat, rice, millet, kaoling, coarse grains, and sweet potatoes converted in to a grain equivalent to 4 : 1 ratio. S. Ishikawa used a 0.81 reduction factor to calculate the figures for foodgrains from the grain figures of China which are in terms of unhusked grains. See his "Factors Affecting China's Agriculture in the Coming Decade" in Institute of Asian Economic Affairs, November 1967.

The Chinese figures relating to Industrial Production are obtained from R. M. Field's study in the Assessment, Table 1, p 63. Field has not used the official sources and has constructed his own indices of industrial production based on critical examination of various sources. Moreover, unlike those of Chao, Liu and Yeh, the Chinese Official, Field's study covers the entire period 1950-70 and hence I have used his series as the basis for my estimates, even though I believe that his figures are low. Moreover, since 1960, Field has estimated a range (e.g. 315-319 for 1960) and I have used only the mid-points of his ranges to prepare my index in Table 3.

The Chinese figures relating to Cotton, Cloth, Electricity and Chemical Fertilizer figures are obtained from Ashbrook's study, op. cit. Chinese export and Import figures are from A. H. Husack and R. E. Batsavage, "The Trade of the PRC" in Assessment, p 343.

Data relating to Domestic Investment as percentage of national income in India are obtained from Debesh Bhattacharya's "A Critical Survey of Indian Planning and its Achievements" in Journal of Contemporary Asia, Vol. 3, 1973.

Chinese Data relating to Domestic Investment as percentage of net domestic product are derived from T. C. Liu, "Quantitative Trends in the Economy of the Chinese Mainland" (Table 25) in Economic Trends in the Economy of the Chinese Mainland 1952-1965, edited by W. Galenson, A. Eckstein and T. C. Liu. The Chinese Figures on Per Capita availability of foodgrains are obtained from Chu-yuan Cheng's book, The Economy of Communist China, 1971 p 18.

Both India and China have been experiencing fairly similar pattern of growth of population i.e, a reduction in mortality rate due to improvements in living standards and health conditions. While the death rate in both countries has been falling substantially below pre-Second World War level, the birth rate has not yet shown any significant fall and consequently the rate of growth of population in China and India around 2-2.5 per cent per annum during the period 1950-70 seems to be a realistic figure.

China did not have consistent policy towards population problem. During the early fifties Mao was rude to prophets of over-population, dismissing their prediction as the "absurd argument of Western bourgeois economists." "It is a very good thing," he had said, "that China has a big population. Even if China's population multiplies many times, she is fully capable of finding a solution—the solution is production."* However, since the early sixties, birth control policies have been driven home relentlessly with the mass of the population. In the *Assessment* estimates, Chinese recent measures in favour of contraception, free abortion and birth control were not properly considered. Joan Robinson suggests that the drive to lower population growth has been much more successful than generally assumed in the Western press and academic circles. Nevertheless I believe that her estimate

* (Selected Works, Vol. IV p. 453)

of 750 million in 1972 and Curtin Ullerich's figure of 1.2 to 1.4 per cent rate of growth of population in China are unrealistically low figures. Our estimate in Table 3 suggests that the rate of growth of population for the period 1950-1970 in China is 2 per cent. If it is correct, it seems that Chinese growth rate of population is slightly less than that of India for the corresponding period.

From Table 3, it is also clear that both China and India have similar rates of growth of agriculture and foodgrain production between the period 1950 and 1971. However, it is necessary to emphasize that the range of 2.2 to 2.2 per cent for China would be regarded as conservative estimates, and Curtin Ullerich suggests that the actual growth rate of agricultural production would be around 5 per cent. The main point is that even with these conservative estimates, China does not seem to have lagged behind India in the agricultural sphere of activity.

In the industrial sector both China and India have recorded tremendous increase during the 1950-71 period. Compared to India's 6.5 per cent, the average annual rate of industrial production in China has been conservatively estimated to be about 8-12 per cent for the entire period.

Chinese annual rate of growth of industrial production was around 18 to 27 per cent (depending on different estimates provided in Table 2) for 1952-59. The same rate was not maintained during the sixties. On the other hand, the pattern of growth of industrial production remained steady for India, so that the annual rate was 6.5 per cent for both the decades 1951-60 and 1961-70. Nevertheless, Chinese rate of growth of industrial production was significantly higher than that of India for the entire period.

Similarly, China has been experiencing a higher rate of growth of cotton-cloth production than India. This is evident in Table 3, which also shows that both India and China are now increasingly using electric power, nitrogen, phosphate and chemical fertilizers in their industrial and agricultural operations. In the application of new inputs like fertilizers, there has been in recent years a remarkably similar shift in policy in both countries, although it should also be pointed out that China has been improving agricultural operations by the use of high-yielding seeds with irrigation, fertilizer application, improved cultivation methods, etc. since the mid-fifties, in India, the Green Revolution and the introduction of a package of key inputs for more agricultural output did not actually start before the beginning of the sixties.

Between 1952 and 1959, China experienced a 20 per cent average annnal rate of growth for exports and 16 per cent for imports. India had a virtually stagnant export sector during this period. Since 1960 Chinese foreign trade sector has become relatively unimportant for the Chinese economy and it had been stagnating until 1970. On the other hand, Indian performance was relatively steady during the sixties and because of this steady improvement Indian economy has become more trade oriented than that of China. Overall Indian annual rates of growth of exports and imports have been 6.1 per cent and 6.9 per cent respectively for the period 1950-70, while the corresponding Chinese figures are 4.8 and 3.5 per cent.

However, there is one basic difference. China is more self-reliant than India. She has maintained a surplus in its trade with the rest of the world since 1955, even through the post-Great Leap forward Crisis years of 1960 and 1961. On the other hand, India has been experiencing a trade deficit for all the years since the introduction of planning in India.

The proportion of net domestic investment in net domestic product is substantially higher in China than the proportion of domestic investment as percentage of national income for India. Investment has played an important part in generating additional output in China. Unlike India, the willingness to undergo sacrifices in consumption is indicated by high proportion of net domestic investment in net domestic product in China. Chinese achievements in this field is commendable more so because China did not receive any foreign aid since 1960. In India, the proportion of investment financed through aid has varied from 34 per cent to 23 per cent for years 1960-61 to 1966-67. For 1967-68, it might have been as high as 37 per cent. Such heavy dependence on aid for investment is an indication of the reluctance to forego immediate consumption on the part of those who are in a position to do so.*

Cheng's estimates of per capita availability of foodgrain is very low for two reasons. First, his foodgrain estimates are pure intelligent guess and are not based on any scientific objective study. His grain output figures are very low compared to most estimates referred to in Table 1. Second, his population figures do not take account of the impact of the recent changes in birth control policies in China and consequently they are rather high. If his figures are correct, there should not be any improvement in food supply and living standards of the Chinese people. This is not borne out by the foreign observers who have visited China in recent years. Food seems abundant in all parts to all observers.

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* See Sukhamey Chakravarty, "High Rates of Saving and Investment Necessary for Economic Progress," The Times os India (January, 1968)

Chinese concept of national income is quite different from that of India. China follows the Marxist concept which distinguishes between productive and unproductive activities, only the former being considered as generating a real product. Sometimes she excludes services and even trade to some extent in her calculation of national income because these activities are not regarded as "materially productive." Since many economists working on the Chinese economy tend to ignore this important difference, they tend to overlook the huge investments carried out by China in the educational aspects of its social transformation, simply because China would not report on these investments, which may not be measurable.

Table 4 presents a range of estimates for average annual growth of national product and income of China and India during the period 1951-1972. Many of these estimates could be criticized on a number of grounds. As Eckstein has pointed out, Liu and Yeh overestimated food crop production in 1952 and thereby underestimated the rate of growth of agricultural product and consequently gross national product as a whole between 1952-57. Thus, we find that both Wu and Liu-Yehs figures of 5.6 and 6.0 for 1952-57 are exceptionally low. Li, Hollister and Reconstructed Official estimated the annual growth rate of national product of China to be around 9 per cent for the period 1952-57 and this rate seems more realistic.

Table 4 : Average Annual Growth of National Product

(Per cent)

	Eckstein	Perkins	My estimate
Average Annual Growth of National Product			
China			
1952-72	4—4.5	4.5—5.0	5.0—5.5
India			
1952-72	3.5	—	3.6

Liu and Yeh have also constructed an econometric model based on a set of annual 24 by 24 sector input-output tables for 1952-57 data and other information and assumptions from the State Dept. and Consul-General of Hong Kong to estimate gross domestic product for the period 1961-70. Their estimate of annual 2.6-3.0 per cent rate of growth of gross domestic product is unrealistically low for two reasons. First, their estimate for agricultural production is based on information from Hong Kong Consulate series which greatly underestimate foodcrop output for the 1958-63 period. Secondly, the assumption that underlying patterns of inter-sectoral relations have not changed since the mid-fifties so that any extrapolation based on them would provide an accurate view of national product trends for China is not realistic and hence any figures based on this unrealistic assumption are bound to be low.

The *Assessment* estimate of average annual rate of growth of 3.1 per cent for the period 1957-70 is also low because of its assumption that, throughout this period, the ratio of industrial and agricultural "constellations" of economic activity remained at the approximate ratio of two to one prevailing in 1957. There were clear changes in interindustrial relations, revealed in Rawski's study, that make the assumption untenable. Rawski has estimated net domestic product, which gives an annual increase of 4.7 per cent between 1957 and 1971, somewhat below the 5.1 per cent annual average recorded for the longer period 1952-71.

My estimate for Chinese net national product is made in the following way. In 1957 industrial and agricultural sectors contributed 77 per cent of China's total gross national product. There are no estimates of the remaining (i.e., the services) sectoral rates of growth over the period 1957-72. Following Perkins, we assume that certain services (finance and trade) grew at the same rate as industry plus agriculture, and that others (residential rents, personal services and government administration) kept pace with population. On this basis, the annual growth rate for service sector for the period 1957-72 is 4%.

Combining this figure with the very conservative growth rate for industry (8 per cent) and agriculture (3 per cent) we get an annual (average) rate of growth of gross national product around 5.0-5.5 per cent for the entire period 1952-72. Thus, it appears that in spite of the setbacks of 1960-61 after the Great Leap Forward and the Soviet withdrawal of aid and technicians, and finally disruptions caused by the Cultural Revolution in the years 1967 and 1968, China has managed an overall growth rate of over 5 per cent that has kept well ahead of the increases in population growth. Consequently the substantial rise in per capita income must lead to significant improvements in living standards of the Chinese people. From Table 4, it is evident that

Chinese rate of economic growth has been much faster than that of India, which recorded 3.6 per cent average annual rate of growth of national income for the period 1952-72.

It will be interesting to compare the achievements of China and India with the industrialized countries in their development stages. Since the experience of Meiji Japan is often cited as a case of development in which agriculture played a significant role, we may compare 2.9-5 and 2.6-4.5 per cent growth rates from Table 3 for China and India respectively with the rate of growth of agricultural output in Japan between 1880-84 and 1915-19, which was about 1.8 per cent. It is worth remembering that Indian agriculture, which had for decades prior to the adoption of planning been growing at the rate of barly ½ per cent per annum, has since 1950-51 been expanding at over five times that rate. Similarly, Chinese average annual rate of growth of agricultural product for the period 1952-70 was many times higher than the rate of growth of grain output between 1914-18 and 1931-37. As Eckstein sees it, "The differences in the performance rates of these two periods appear so marked that they are well beyond the probable margin of error." (Op. cit.). He also reports the findings of Deane and Cole ; real product in agriculture, forestry and fishing grew at an average annual rate of 1.2 to 1.5 per cent in Britain during the first few decades of the nineteenth century. Thus, viewed in historical perspective, the rates of growth of agricultural production both in India and China should be considered as significantly high.

Indian industrial production remained stagnant between 1940 and 1950, and Chinese industrial production actually declined during the period of the Civil War, probably falling to 40 per cent of its previous peak of 1943-44 in 1949. Compared to that, both India and China have recorded tremendous increases during the last twentytwo years or so, especially in the industrial sector of their economies.

Table 5 provides a comparative annual growth rates of national income and population in the approximate development period of the industrialized countries.

The magnitude of the figures in Table 5 speaks for themselves. China has the highest rates of growth both for total national and per capita incomes in the above table. This has been a tremendous achievement for China. Table 5 indicates that gross national product in China grew at an average annual rate of 5.3 per cent during the period 1952-72, and per capita income at 3.2 per cent. In my opinion these are conservative estimates. Even if we take these

Table 5

Annual Rates of Growth of National Income and Population in the Approximate Development Period of Selected Industrialized Countries and of China and India.

(in percentages)

Country	Period	National Income	Per capita income	Population
U.S.A.	1869/78-1904/13	4.6	2.6	2.0
Japan	1878/87-1903/12	4.1	3.0	1.1
Canada	1870/79.1905/14	3.9	2.3	1.6
Germany	1860/69-1905/14	3.1	2.0	1.1
Russia	1870 -1913	2.5	1.0	1.5
U.K.	1860/69-1905/14	2.3	1.3	1.0
Italy	1862/68-1904/13	1.5	0.8	0.7
India	1952-72	3.6	1.3	2.3
China	1952-1972	5.3	3.2	2.1

Sources : Figures relating to India and China are obtained from mid-point estimates of Tables 3 and 4. Other figures are from Simon Kuznets, "Quantitative Aspects of Economic Growth of Nations : I. Levels and Variability of Rates of Growth, "Economic Development and Cultural Changes."

conservative estimates, Chinese national income and per capita income growth rates are significantly higher than India's for this period. The average annual rate of growth of real national income in India is approximately 3.6 per cent, and the corresponding rate of growth of per capita income was 1.3 per cent for the entire period. While, viewed in historical perspective, these rates of growth for India may be considered as eminently respectable and represent an improvement upon the economic stagnation that characterized the British colonial period, they fall far short of the objectives of Indian economic development and the aspirations and needs of the Indian people.

Thus, China's economic growth record appears to be substantially better than India's to date, and it has been achieved in spite of total withdrawal of Russian aid and extreme periods of instability during the Great Leap Forward and Cultural Revolution. China is one of the very few countries which currently has no debts, either national or external. Moreover, backed by considerable reserves, including gold, China's currency has been free from devalution or inflation and has remained uniquely stable in a world characterized by the diminishing purchasing power of the currencies of most countries.

Finally, we should not judge the Chinese model in terms of growth alone, because economic growth is very unsatisfactory index of the rate of economic development, bacause it ignores the question of distribution of income and wealth, unemployment problems and economic infrastructure. China has gone straight to the roots of the problems that have been plaguing poor countries for many years—the lack of food and low levels of nutrition, gross inequalities of income and consumption, unemployment and a sense of social uselessness, and the blind expansion of the cities. She has been uniquely successful in the development of the people's economic life for the bénefit of all instead of for the benefit of the few, placing the needs of man before those of machines.

MAJOR SECTORAL ALLOCATIONS IN THE 5-YEAR PLAN OF BANGLADESH

(In Taka crore)

Sector	Total	Public Sector Outlay	Private Sector Outlay
1. Agriculture and Water	1067	1041	26
2. Industries	877	738	139
3. Power and Natural Resources	572	522	—
4. Physical Planning and Housing	451	315	136
5. Transport	594	528	66
6. Communications	114	114	—
7. Education and Manpower	316	316	—
8. Health and Social Welfare	220	220	—
9. Family Planning	70	70	—
10. Trade	170	62	108

(Continued from page 40)

The demand-pull and cost-push theories of inflation formulated on the basis of a somewhat different approach from the Keynesian principles by economists have now made an attempt to sort out the factors responsible for the upward push of costs and the downward pull of demand. Whatever the line of approach may be, the literature on the downward pull of demand has directly or indirectly adopted the same Keynesian pattern of thinking and arriving at the conclusion that prices rise in response to an excess of aggregate demand over existing supply. The cost-push theory, on the other hand, assumes that inflation is caused by factors of production trying to increase their share in the total product by raising their prices. Money wage rises are made responsible for the upward push of cost leading to inflation. Thus some recent studies which are quantitative in character, have tried to explain the process of inflation on the basis of wage-price relationship. The 'Phillips curve' technique of analysis[7] has shown in the context of UK that the rate of money wage rise, being a function of the rate of unemployment (i.e. demand for labour), is responsible for the rate of price rise and rise in the cost of living. The Dicks-Mireaux[8] econometric analysis is the empirical verification of wage-price interactions in the context of the British economy which explains how inflation is caused by the interacting rate of increases in wages and prices correspondingly. A similar approach has been made by Klien and Ball in their joint paper. They have estimated the level of unemployment, the consumer price index and hours worked as independent variables and attributed the shifts in the wage-equation to increased trade union militancy in the mid-fifties. Thus the models of the Dicks-Mireaux-Ball-Klien type have examined the case of wage rises relating to prices in the context of a mature capitalist economy.

What we observe on the causal explaination of the phenomenon of inflation from the Western model of economic thinking on inflation, are the following :

(1) Inflation is actually a monetary concept.

(2) Inflation has been common in the economy where the system of production is capitalistic in composition—in full sense or

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[7] Phillips A. W. 'the Relationship Between Unemployment and the Rate of Change of Money Wage Rates in U.K.', Economica, vol. 25 (1958) pp. 283-99.

[8] Dicks-Mireaux, L. A. 'The Interrelationship Between Cost and Price Changes, 1946-59 : A Study of Inflation in Post-War Britain', Oxford Economic Papers, Vol. 13 (1961), pp. 267-72.

in mixed form—and the mode of exchange and distribution is money-oriented.

(3) The downward pull of demand, supply remaining constant, is responsible or the upward push of cost, demand remaining the same, is responsible or the combination of both ; whatever the factors causing the demand-pull and the cost-push are attributed.

(4) The demand-pull.causal explanation of inflation leads to a recommendation of monetary restraints, and the cost-push explanation leads to a recommendation of administrative fiscal restraints on price rises and income policies aiming at halting inflation without sacrificing employment.

Now the question is : Are such theories of inflation relevant to the case of price inflation in India ? At the outset of our analysis, their relevancy to the Indian case of price inflation may be challenged on the ground that there is no full employment or near-full employment state and the state of development existing in this country categorically differs from that existing in the Western capitalist world. India is a typical developing economy where 'adject poverty', massive unemployment, and income inequalities exist in large amount and proportions. Therefore, the efficacy of monetary and fiscal restrainsts has been low and insignificantly useful in controlling and holding down the rising price level. This is what we have been experiencing during the period of planning in India. The rising prices are moving fast in the upward direction in spite of the anti-inflationary measures taken by the Government. This shows that there has been no abatment of pressures on the price front despite the imposition of monetary and fiscal restraints on price rises. We may ascribe the in proper implementation of such measures to the Government in controlling the rising price movements. We may also make the underground flow of black money in a huge amount as responsible for these movements, because the uncontrollable black money and its flow contribute to them and make the implementation of monetary and fiscal measures as a failure in holding down the price level at a reasonable level. But the questions are : Why does a huge amount of black money exist and has an underground flowing in the economy ? Can we make its existence and flow solely responsible for the inefficacy of such anti-inflationary measures ? If we cannot affiirm it fully, then we cannot negate it fully. There is something fundamental wrong within the system itself. We cannot also deny the importance of 'demand.pull' and 'cost-pull' forces in raising the price level in the upward direction.

But the question is : why do such forces originate and operate leading to spiral inflation ? Again we come to gather an impression that some thing wrong exists within the system itself.

If Western theories of inflation are taken for knowing the causes of spiral price inflation and put forward to find out measures accordingly, we are sure going to intensify the flow of inflation in a wide dimension of space and time. This would be essentially on account of the two facts : firstly, we shall be forced to treat inflation as a monetary concept and to justify the usefulness of the system where the area of private enterprise is larger than that of public and State enterprises. Hence the monetary and capitalistic myths of inflation as a monetary concept and as capitalistic in origin are going to exist and holding down the price line at a reasonable level will be a dream in the Indian economy. Such myths should be exploded and we have to perceive inflation as something other than our Western dominated and oriented thinking reflects on the problem and phenomenon of inflation.

PART II

Myth of Economic Development and Growth

Economic growth is defined as a process by which per capita real income increases over time. Economic development is assumed to deal with the essentials of growth at the policy-making level. The models of growth explain the causal relationships among capital, labour, land, and technological progress in the process of growth. If we take the Harrod-Domar model for an example, it points out that $r=s/k-p$, i.e. the rate of growth of per capita real income is a function of saving-income ratio (s), capital-output ratio (k), and rate of growth of population (p). This shows that we can raise the per capita real income either by raising saving-income ratio, or by lowering the capital-output ratio or by reducing the rate of growth of population or by exercising all these instruments of growth. The last two are supposed to be beyond the domain of policy control. Hence the only way to raise per capita real income is through increasing the saving ratio. How this can be raised, becomes the main concern of economic development. Most of the models of growth highlight that, other conditions remaining the same, the rate of growth is a function of investment, its allocation, and sectoral composition relating to choice of techniques. This is done on the assumption that the growth of real national income per head of population will ensure development, and consumption in course of time and thereby distributive justice can be also achieved. Hence the modern growth and development economics holds employment, removal of poverty, and income inequalities as the by-products of growth. This contention has led to 'output-growth'' oriented emphasis on development in underdeveloped economies like India. Certain measures for changing the institutional set-up have been also taken by the Government, for instance, land reform measures, but not with a view to changing the system and mode of production and distribution of wealth and means of production rather with a view to making the given institutional structure conducive to growth. Thus the development strategy of planning for growth in the country like India has been formulated more with investment and output growth bias than distribution-bias. The system as given, this type of emphasis has been actually troubling the economy and has made it money-oriented with the essence and instincts of capitalism which very much exists in the mixed type of the Indian economy. National product, agricultural output, and industrial production have been increasing in volume and composition. But the price levels have been rising at a much faster rate than what they had been rising since the inception of planning in India. Can we make excess demand for food and agricultural production over the supply responsible for such jumpy and steep price rises ? Can we not charge maldistribution of food and agricultural output and the high propensity to hoard surpluses responsible for such price rises ? Can we not allege the maldistribution and the high propensity to hoard surpluses as the products of the capitalistic system and mode of production and distribution existing and operating in the economy ? If so, do we not think of changing the system as such ? But we cannot do because the mixed concept of the economy and planning are very much operative in this country.

The socialist countries like Russia and China exercise and operate the method of investment planning for raising the rate of growth. But such economies being completely controlled, their exercise of investment planning does not create imbalances and shortages, leading to spiral price inflation either through downward pull of demand or through the upward push of cost or through both ways in the absence of the capitalistic system of production and money-oriented mode of exchange and distribution.

Following the Western philosophy of growth and development, deficit financing is taken as an important source to supplement the shortage of capital funds for investment. The Lewis type of growth models has explained inflation, which generates from deficit financing, is self-destructive in character. It is also contended that growth with some mild inflation is also essential for its acceleration in future. Whether there should be growth with mild inflation or not, it is not a subject of dispute because the process of growth is always associated with some price rises. This also happens in socialised countries, but the heart-burning impact of such rises is not felt on the people who own nothing and are ensured of getting their minimum supply for subsistence according to work and needs. This is essentially on account of ensured distributive justice to them by the state. Hence investment outlays and their sectoral allocation contribute to the growth of output and production without making any overflow of money and income from the State to the individuals in the shape of private property and ownership.

Hence the myth of growth and development as an objective of output maximisation without ensuring its equitable distribution (which is not possible in the present set-up of organisation) through investment planning will neither remove poverty, inequalities, and unemployment nor check the price level from rising, whatever the rate of growth of per capita output may be and the anti-inflationary measures taken by the Government to hold down the price level from rising above a reasonable level. This myth of growth and development needs to be exploded by planning to achieve growth through social justice. The system and organisation given as such will contribute to price rises if the development approach to growth is not drastically changed. Assuming the existence of the same economic system and the approach of planning, monetary restraints on the price front will be futile and fiscal measures like taxation will indirectly contribute to price inflation by shifting the incidence through making a rise in prices.

PART III

Price Behaviour and Deficit Financing

The price level has been persistently rising in the upward direction with steep-jumps. The steep-jumpy behaviour of agricultural and food prices has been spectacular. The prices of industrial raw material have also shown tremendous rise in their prices. Table 1 shows that the percentage rises in the price indices of all commodities have been 35% and 30.4% during the Second, and Third Plan and plan holidays respectively. Such rises in the price index of food articles have been 38.6%, 40.2%, and 36.1% during these plan periods respectively. The percentage rise in the price index of industrial raw meterials has been also high during these periods.

Table 1

Variations in Prices

(Percentage changes in the wholesale index)

Group of Commodities	1st Plan 1950-51 to 1955-56	2nd Plan 1956-57 to 1960-61	3rd Plan 1960-61 to 1965-66	Plan Holidays 1965-66 to 1969-70
All Commodities	−17.3	+35.0	32.2	30.4
Food Articles	−23 0	+38.6	+40.2	36.1
Liquor & Tobacco	−17.8	+35.7	+24.3	+46.4
Fuel, Power, Light and Lubricants	+ 2·8	−26.1	+27.5	+25.0
Industrial Raw Material	−24.3	+46.9	+30.1	+35.6
Manufactures	− 3.4	+24.3	+20.3	−21.5

Source : Various Reports on Currency and Finance, RBI.

The above table shows that the rise in the price index of industrial raw materials was highest during the period of the Second Plan. If the percentage rate of rise in prices per annum is taken into account, it will be higher during the period of plan holidays. For instance, the price index of food articles was rising at the rate of 12 per cent per year during the plan holidays, while that was more than 5% during the Third Plan. In cases of all prices this is true.

The prices of food articles have been rising at a higher rate per year during 1965-66 to 1969-70 despite increase in food production from 72 million tons to 99 million tons in 1969-70 which indicate 37.5% increase in that period over 1965-66.

The current price situation has been the worst in the economic history of this country, except perhaps a couple of years during the Second World War. Table 2 shows that the index numbers of all commodities of food articles, edible oils, and industrial raw materials have jumped from 186.1, 206.8, 198.1, 191.2 obtained in end-June 1971 to 242.0, 284.8, 337.9, 295.4 in end-June 1973. Thus the percentage variations in the index numbers of these commodities have been 21.7%, 24.2%, 64.3% and 60.2% respectively in end-June 1973, over end-June 1972. The annual average of General Index for 1972-73 (July-June) witnessed an increase of 13.1 per cent as against a rise of 4.9 per cent. The spurt of price inflation, particularly with respect to agricultural and food commodities, has been unprecedented in the recent

Table 2

Trends in Index Numbers of Wholesale Prices

Group/Sub-Group of Commodities	End-June 1971	End-June 1972	End-June 1973	Percentage Variation (2) over (1)	Percentage Variation (3) over (2)
	1	2	3	4	5
All Commodities	186.1	198.8	242.0	+ 6.8	+21.7
Food Articles	206.8	229.3	284.8	+10.9	+24.7
Rice	204.8	225.4	263.4	+10.1	+16.9
Wheat	199.2	207.4	227.0	+ 3.8	+ 9.5
Jowar	191.9	232.0	297.6	+20.9	+28.3
Bajra	139.5	202.4	316.8	+45.1	+56.5
Edible Oils	198.1	205.6	337.9	+ 3.8	+64.3
Liquor & Tobacco	194.4	215.5	246.1	+10.9	+14.2
Industrial Raw Materials	191.2	184.4	295.4	+ 3.6	+60.2
Manufactures	164.8	173.7	188.9	+ 2.8	+ 8.8

Source : Report on Currency and Finance, 1972-73, RBI.

years. The Hindusthan Times of January 10, 1974 notes that the official price index was up by 23.2 per cent in a year for the year ended December 15, 1973 and stood at 261 compared to 211.9 a year ago. The price spiral is all the more alarming since this is the time of the year when prices normally fall due to harvesting season. The crop output situation is not as worse as it was during 1972-73.

The present price spurt is essentially on account of spectacular rise in agricultural and food prices. In terms of the weighted contribution of the commodity groups comprising the General Price Index, the groups of food articles and industrial raw materials accounted for

Table 3

Weighted Contribution made by Major Groups to Price Rise (In terms of percentage)

Group	End-June 1972 over End-June 1971	End-June 1973 over End-June 1972
Food Articles	73.2	53.6
Liquor and Tobacco	3.9	1.6
Fuel, Power, Light & Lubricants	2.4	1.9
Industrial Raw Materials	— 6.3	31.4
Chemicals	0.8	0.2
Manufactures	20.5	9.8

Source : Report on Currency and Finance, 1972-73, RBI.

about 85 per cent of the total rise in the General Price Index. 'Manufactures' accounted for 10 per cent. Table 3 presents this picture of the weighted contributions made to the general price spurt by food articles and raw materials prices rise.

This shows the importance of agricultural commodities in the current price spurt. Table 4 shows percentage increases in the prices of certain individual and sectors' commodities. The above table indicates 134% increase in the Price Index of agricultural commodities in 1972-73 over 1961-62. The percentage increase in the price index of gur has been the highest in 1972-73 over 1961-62, i.e. 296%. Increases in cloth manufactures, sugar, and non-agricultural commodities have been also very high. The rise in the price of vanaspati as an edible has also gone up significantly. The current price situation is worsening in spite of the adoption of a number of anti-inflationary measures taken by the Government. After the State take-over of wholesale trade in wheat, the price spurt started to become most serious and alarming. The post-State take-over period witnesses a big price spurt in regard to agricultural commodities and food articles. The prices of coarse foodgrains like jowar, bajra, khedasari, etc. started to shoot up speedly and steeply in the upward direction. The question

Table 4

Percentage Increases in the Prices of Certain Individual Commodities and Commodity Sectors

Sector/Commodity	Average Index* 1961-62	(July-June) 1972-73	Percentage Increase in 1972-73 over 1961-62
Agricultural Commodities	100.4	234.3	134
Non-Agricultural Commodities	100.7	207.4	107
Cloth Manufactures@	100.4	167.9	68
Vanaspati	99.4	206.2	107
Soap	100.8	147.1	46
Sugar	101.0	215.0	114
Gur	103.1	398.6	296
Salt	101.0	153.4	52
Matches	101.3	114.1	13
Bicycles	100.9	121.5	21
Fertilisers	99.6	143.5	44

Source : Report on Currency and Finance, 1972-73, RBI.

is : Can we impute 'demand pull' and 'cost-push' forces and deficit financing in particular to the occurrence of this big spurt in the price level ?

It has been repeatedly said that the present economic system is a paradise for the free play of such forces in raising the price level upwardly because the exercise of the monetary and fiscal restraints has a smaller capacity to control or influence the price level. Assuming agriculture as a purely private enterprise, its system and mode of production as capitalistic in operation, the administrative and political set-up as corrupt having invisible alliance or soft corner with or for capitalism, the flow of investment outlays and the deficit financing with the existence of a huge amount of black money make this paradise more rosy. The negative political character of the trade unions also contributes to this price spurt by pusing up the cost of production through raising money wages.

The increasing doses of deficit financing and net RBI credit to the Government have contributed to price rises. The budgetary deficits, including both Central and States, stood at Rs 2425 crores at the end of 1971-72 and the net RBI credit money to the Government, including both Central and States, was recorded at Rs 2271 crores. The 1972-73 and 1973-74 Central and States' budgets placed a deficit of Rs 868 and 253 crores respectively. Similarly, the net RBI credit to the Government estimated to be Rs 752 crores in 1972-73. A major factor accounting for this increased deficit was expenditure arising from natural calamities. Increases in developmental and non-developmental heads of the Keynesian nature also contributed to the enhancement in the deficit. The flow of deficit money into the economy through different channels of spending has definitely contributed to the present spurt in prices. The flow of this money is assumed to have inflated prices because of the very system which allows traders to hoard agricultural and food surpluses in order to create a situation of scarcity in the economy. Thus the deficit and credit advance to the Governments by the Reserve Bank of India have added more fuel to the fire and the flames have been fanned more comfortably.

PART IV

Where Fallacies lie

The situation has been the worst after the State take-over of wholesale wheat trade. This policy threw a challenge to the wholesale traders, businessmen, big farmers, and the supporters of free trade system. As a result they intensify their efforts to hoard more of the marketable surpluses of foodgrains. The intensification of their efforts to hoard surpluses led to the marketing of their smaller portion for open sale. The declining tendency in the proportion of marketable surpluses to marketed ones may be revealed on the arrivals of foodgrains in selected markets. This tendency is more revealing after the nationalisation of wholesale trade in wheat. The above table shows successive declines in the market arrivals of rice, wheat, and maize despite no sharp fall in their productions. There has been a sharp fall in the market arrivals of wheat from 2912 thousand tons in 1971-72 to 1813 thousand tons in 1972-73 in spite of some increase in wheat output in 1972-73. The State take-over policy having an aim to procure wheat (and other cereals) from its marketed surplus failed to procure it as much as it was done during previous periods because of the decline in the proportion of its marketed surplus to marketable surplus. With respect to rice, the amount of rice declined because of the fall in its market arrivals. This tendency confirms us that the tendency to hoard the marketable surpluses of foodgrains has led to the fall in the market arrivals of their amount. As a result the situation of scarcity persisted to exist in the economy. This picture becomes much more revealing if we take the case of wheat which has attained a spectacular spurt in its production. Thus hoarding motive is the origin of inflationary price spiral and other forces have found out easy ways to push up the price level persistently through time.

Table

Arrivals of Foodgrains in Selected markets, Procurement of Wheat and Rice, and Production of Major Crops like Rice and Wheat

Year	Market Arrivals[a]			Production[b]		Porduction[a]	
	Rice	Wheat	Maize	Rice	Wheat	Rice	Wheat
1966-67	1425	836	145				
1967-68	1708	1740	204				
1968-69	1728	1851	272			3433	2387
1969-70	1923	2094	284	40.43	20.09	2943	3192
1970-71	2112	3045	287	42.22	23.83	3194	5100
1971-72	2026	2912	209	42.73	26.47	3116	5006
1972-73	1646	1813	172	40.00	26.50	2570	4346

Source : Report on Currency and Finance, 1972-73, RBI.

The challenge thrown to the nationalisation policy of wholesale trade in wheat (and the expected State take-over of wholesale trade in other foodgrains) intensified the hoarding motive of the traders and dealers in regard to other cereals. This motive led to the hoarding of other coarse varieties of foodgrains. As a result the situation of scarcity was also created relating to such commodities. The speculative games became successful in pushing up their prices as well. The speculative games had free play because of the overflow of excessive developmental and non-developmental expenditures through a number of channels. The stock of black money became smoother to flow by giving a push to the rising prices.

Undoubted the financing of the deficit and the credit advance to the Government by the Reserve Bank of India have contributed to the inflationary price spiral as an assisting force. The deficit financing has an easy hand to move in favour of inflation because of the very system existing therein which provides a comfortable ground for the trading and busines community to play.

PART V

Conclusion

The first part of this paper shows that the theories of inflation directly or indirectly treat it as a monetary concept. This treatment is essentially on account of holding such an economic system as capitalistic in composition. The money-oriented mode of exchange and distribution exists and operates therein. Thus inflation originates from the working of that system. In view of this treatment of the concept and phenomenon of inflation, these theories have placed 'demand-pull' and 'cost-push' explanations and policy measures are recommended accordingly. This basic concept and philosophy of inflation will be a myth if we accept this as true for the economy like ours.

Similarly we find in the case of development and growth in Western economies. Only by raising the national product or real income, we cannot remove poverty, unemployment, and inequalities. Investment planning will neither solve these issues of development nor hold down the price line. The operation of this type of planning in this country has raised its national product but failed to remove them and, on the contrary, the price level has been rising persistenly in the upward direction. Having the output-growth oriented emphasis on development of planning, deficit financing is placed as an instrument of capital formation and financing which has again caused the inflationary price spiral, as our analysis indicates. Hence this myth of growth and deficit requires its explosion. This is what we conclude in the second part of our analysis.

The third part examines the price behaviour and observes that the alarming price situation has been on account of the present system which protects the hoarding motive. The hoarding motive which makes the price behaviour speculative, is the basic cause of price inflation. This is the main line of conclusion in the fourth part. Deficit financing and other demand-cost raising forces make the play of the speculative games easier. The ineffectiveness of the Government anti-inflationary measures adopted and operated through monetary and fiscal restraints, which are designed on the theories of inflation, proves our contention and confirms that the system should undergo a radical change or the speculative games of trading and business community should go for ever. Suggestions—any one of the above, contain a note of caution that there should also be a change in perceiving the concept and phenomenal nature of price inflation. If such fundamental changes are not made, the inflationary price spiral is going to persist and move in the upward direction even in the presence of monetary and fiscal restraints and any other policy measures taken by the Government.

On the eve of entering the 19th year of publication we express our deep gratitude and sincere thanks to all our readers, contributors, advertisers, and well-wishers.

ECONOMIC AFFAIRS

ECONOMIC AFFAIRS

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Our Economy : In Retrospect and Prospect

Exasperated with the poor performances of agriculture and industry and the consequential sharp rise in price, the Government seems to have collapsed to fate. In 1973 price rose by 19.3 per cent. The rise of money supply with the public in this period of 15.8 per cent was more an effect of the continuous price rise than the cause of the current rise in price. The base of price rise may be found in stagnant production. Growth of industrial production which recorded a rise of 7.1 per cent in 1972 slid back again in 1973. Agricultural production is likely to increase by 10-15 per cent in 1973-74. But it is too meagre a rise in view of the fact that population has grown by an average annual rate of 2 per cent.

Food and price are the number one problem for the economy. Food articles are short in absolute sense, made shorter by low marketable surplus. In order to induce the farmers to part with the surplus the procurement price has to be raised which will mean making provision for more subsidy for food, if the objective of procurement is to protect the vulnerable sections of society from free market prices. But more subsidy means more resource mobilization by the Government. Government likes to limit the deficit financing. But it admits there is little possibility of raising additional resources by direct or indirect taxation. It is now looking for new ways and means to raise additional resources such as through more efficient management of public sector units, suitable revision of pricing policies of these units, withdrawals of fiscal subsidies, and more effective tax administration. All this is nothing but an exercise of moving from one corner to another as is well expressed in the contradictions : "the unexpected shortfall in collection of excise duties and much higher expenditures on items such as relief for natural calamities, the liability arising out of the pay commission's recommendations, increase in food subsidy despite upward revision of issue prices and a significant deterioration in the railways position, the Government's efforts to contain the size of the budgetary deficit are unlikely to meet with a significant degree of success." Sometime much is expected from raising a buffer stock but at the next moment the Government feels the reality that the foodgrains surplus is marginal and the foreign exchange cushion for food imports is almost nil. Then after a costly round the economy trip the Government comes back and takes rest on the complacency that there should be a significant increase in agricultural production and then the rest will take its own path of normal growth.

In the draft fifth plan the Government seems to have not given up all hopes. Having carefully lifted itself from harpening on "socialism" the plan specifies the objectives in a few words, "removal of poverty and attainment of self-reliance" conditioning them on the requirements of higher growth, better distribution of incomes and a very significant step-up in the domestic rate of saving. To these the requirement of changing the growth pattern should be taken in. For it is quite correct that it will be "a mistake to regard the problem of price stability as one of demand management only. It is intimately connected with the pattern of growth envisaged in the Plan." But how are these known requirements to be achieved in an economy which is highly surcharged with rising prices, income concentration, and advanced in the capitalist path of development, and in a society where the people have become impatient with the compressions of conditions created over the last 26 years in the name of socialism ? The plan is optimist nonetheless. It seeks to handle the instruments of economic policy for appropriate allocations of investment outlays, a package measure consisting of incentives and disincentives designed to direct the flow of private investment into preferred uses, institutional reforms which will release productive forces, and formulating a set of measure which can help the process of development. But what new dimension or spirit has been added ? Is it not that all these measures had been tried in the fourth plan, in particular, and the spirit propagated ? What is needed is to pinpoint how to change the pattern of growth and concomitantly the pattern of income distribution at this growth stage or hotchpotch capitalist growth of the economy. The traditional measures are no match for them. They are just a time-gaining activity to lead the society to a higher stage of volcanic explosion. The "objectives" cannot be attained by any wish of coordinated deployment of all the instruments of economic policy. A wrong can be corrected by removing the wrong not by overburdening the wrong. The economic problem of our country has now taken the form of a great social problem. People cannot wait for a fresh attempt for the "correct" handlings of the inner contradictions of the economic and social relations. They no longer want to see how the "pattern" is changed instead want to feel that the society is on the move of change in the socialist path through mass enthusiasm in building up a new Indian socialist society. If the country has to take the capitalist path then what have been running on will continue to run until the economy embodies the full driving force of a capitalist economy with all its merits and demerits.

New Oil Facility

Intensive international efforts are continuing in the search for solutions to the balance of payments problems arising from the recent sharp increases in petroleum prices. In Washington, the Fund's Executive Board is currently discussing an outline prepared by the staff for the establishment of a new facility, often referred to as the oil facility, to assist countries in financing current account deficits from higher oil bills. In Teheran, meanwhile, the concept that the new oil facility would receive supplementary financing from the higher earning of the oil producing countries was advanced as the Iranian authorities pledged to set aside at least $1 billion this year, the bulk of which is to be directed to the new facility. The balance is to be used to purchase World Bank bonds, and to provide part of the financing of a new institution proposed by the Shah of Iran to make loans on concessionary terms to developing countries that do not produce oil, and are thus especially hard hit by higher oil prices.

The oil facility would assist Fund member countries in meeting the initial impact of the increase in oil import costs by permitting drawings in amounts related to their oil-induced deficits, to the size of their reserves, and to their quotas in the Fund. Access to the new facility would be subject to an assessment of member's balance of payments position, and it would be supplementary to their other access to Fund resources. From the outside it has been envisioned that the Fund would use its existing resources but might need to supplement them by borrowing mainly from oil exporting countries. The Fund's recent discussions with these countries have been to sound out the possibilities for such financing, and Iran's proposal for loans to the Fund for the oil facility is at market-related rates.

The existing resources of the Fund consist of holdings of gold and SDRs and currencies which can be supplemented by additional borrowing under Article VII, Section 2, of the Articles of Agreement to replenish the Fund's holding of any member's currency. The financing of a new oil facility in part by borrowing would be an instance of the Fund's obtaining additional resources from its member countries.

In Teheran, Mr. McNamara and Mr. Witteveen promised urgent and sympathetic consideration by the World Bank and the Fund of the

Shah's proposal for a new lending institution to provide concessionary loans to developing countries that do not produce oil. Under the Iranian proposal, the institution would have total capital in the first year of from $2 billion to $3 billion, contributed in about equal parts by the oil exporting countries and by industrial nations. Iran will present the proposal to the Organization of Petroleum Exporting Countries. The proposal calls for the institution to have a board of governors providing about equal representation for oil exporting, industrial, and developing countries. This board would supervise and direct policy, and would appoint a board of directors, selected on the basis of their economic and financial competence, to conduct normal operations. Technical and administrative work would be done by the management and staffs of the World Bank and the Fund. For the future, it is envisioned that the new institution's lending would be primarily long term in character, and for development projects ; but at the outset, it would make shorter-term loans for balance of payments support. The Iranian suggestion is for the 12 member countries of the Organization of Petroleum Exporting Countries and 12 industrial countries each to contribute some $140 million to $150 million to the institution to provide its capitalization of $2 billion to $3 billion.

Mr. Witteveen welcomed the Shah's proposal as constructive not only under present conditions, but for the future as well. He noted that the higher cost of oil and changes in other prices create very large deficits among a number of oil producing countries and a number of very large deficits among both developing and industrial countries. Under such circumstances, he said, it is important that governments react in an appropriate way, for if they were to react in the wrong way, applying more or less mechanically old classical doctrines of restoring balance of payments equilibrium immediately, the world might face very serious problems.

The proposed oil facility, he said, would overcome immediate difficulties in an appropriate way, with the Fund helping to finance the deficits, and for this purpose he said it would be desirable if some of the surplus countries would give their.

Regarding the developing countries which do not produce oil, Mr. Witteveen recognized that their problem will be especially acute, and not merely one of financing the deficit, but also a problem of the debt burden which has to be met.

* Source : IMF.

A Cost-Benefit Analysis of Deep and Shallow Tube-Wells in West Bengal

G. C. Mandal[1] **and Nakshatra K. Roy**[2]

Contribution to growth potential of the economy is a major criterion which should influence the process of evaluation of a development project. It is a major criterion because it widens the scope of expansion of employment and better living for the people. Cost-benefit analysis is a very practical device of assessing the economic feasibility of a project or its contribution to growth potential of an economy. This is particularly true when a question of choice arises between one project and another. The method, in the first instance, is not very different from the businessmen's estimation of the soundness of a business proposal by reference to the rate of return expected to accrue from it. Surplus is a crucial question both for a private and a public project. In both the private and public sectors no project is desirable if it results in excess of cost over gross return. In general higher the rate of surplus the greater is the degree of desirability of the project, assuming that both in the cases of private and public projects the surplus is available for further investment with multiplier effect.

With this criterion in view, the present paper attempts an application of the principle of cost-benefit analysis to the assessment of relative efficacy of deep and shallow tubewells on the basis of some case-data in West Bengal where these devices of tapping underground water for irrigation purposes have been undergoing trial for some time. Data are related to the working of 5 deep tubewells and 5 shallow tubewells in the Krishnanagar Community Development Block and were collected through a special survey conducted by the Visva-Bharati Agro-Economic Research Centre (1970-71).*

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[1] Director. Agro-Economic Research Centre, Visva-Bharati, W. B.

[2] Agro-Economic Research Centre, Visva-Bharati, W.B.

* B. K. Choudhury, Economics of Tubewell Irrigation in West Bengal, Agro-Economic Research Centre, Visva-Bharati, 1971 ; there are, however, minor

The Contribution of Tubewell Irrigation

Additional incomes accrued to farmers making use of tubewell irrigation in the form of increased yield rate, increase in area under more valuable crops in preference to less valuable crops and introduction of new crops. But the additional income was mainly due to the extensive introduction of new crops in irrigated area like wheat in the rabi season and limited adoption of HYV paddy. The additional income per acre by noting the difference in aggregate income per acre of unirrigated area and irrigated area has been estimated at about Rs. 362/-. The details of the working out of additional income under deep tubewell are given in Table 1. The data of Table 1 are related to estimated output in the command area of 150 acres under a deep tubewell before and after irrigation, the estimates being made by applying to this area actual yield rates and crop-acreage ratios prevailing in unirrigated area (before the installation of tubewell) and irrigated area (after the installation of tubewell). This had to be done because most of the irrigated area under a deep well was lying outside the orbits of the sample farm areas. Table 1 shows that the largest source of additional income (Rs. 53835.30) arising from irrigation was newly introduced wheat next to which was HYV paddy yielding an additional income of Rs. 8254.96. There is some loss of income due to the disappearance of kalai, gram, mustard and mesta. The net additional income from all crops taken together after the deep tubewell irrigation works out to Rs. 54369.08 or Rs. 362.46 per acre rounded to Rs. 362/- per acre. Under shallow tubewells, in addition to wheat and HYV crops other new crops were mustard and jute in limited areas. The main source of additional income due to irrigation was also wheat under the shallow tubewells. The aggregate additional income per acre due to shallow tubewell irrigation has also been estimated at Rs. 362/- in the above manner.

The summary data on the operation of deep and shallow tubewells which are used in the cost-benefit-analysis of this paper are presented in Table 2.

Following the principle of cost-benefit analysis, the steps that have been used in the calculus of the present case are as stated below :

1. Estimating streams of additional gross returns due to a tubewell project, accruing in the form of value of additional yield due to irrigation.

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differences in respect of some of the data used in this paper and the main report for alternative estimation procedure followed in the present study.

Table 1 : Area Under Different Crops and Yields in the Area of 150 Acres Under a Deep Tubewell

	Before Irrigation				After Irrigation				
Name of Crop	Area (acres)	Yield per acre (in mds.)	Total yield (mds.)	Total value of yield (Rs.)	Area (acres)	Yield per acre (mds.)	Total yield (mds.)	Total value of (Rs.)	Increase (+) or Decrease (—) in total yield after irrigation (Rs.)
Aus	88.36	13.58	1199.93	33598.04	78.30	19.09	1494.75	41853.00	+ 8254.96
Aman	17.03	21.49	365.97	10247.16	8.38	14.80	124.02	3472.56	— 6774.60
Jute	29.09	17.59	510.29	20411.60	37.02	15.23	563.81	22552.40	+ 2140.80
Kalai	37.98	7.86	298.52	5970.40	—	—	—	—	— 5970.40
Gram	23.72	10.33	245.03	5390.66	—	—	—	—	— 5390.66
Mustard	4.22	5.00	21.10	844.00	—	—	—	—	— 844.00
Mesta	0.71	12.00	8.52	255.60	—	—	—	—	— 255.60
Wheat	—	—	—	—	87.07	20.61	1794.57	53835.30	+53835.30
H.Y.V. Paddy	—	—	—	—	11.02	29.73	334.76	9373.28	+ 9373.28
Total	201.03	—	—	76717.46	—	—	—	131086.54	+54369.08
Gross income per acre				511.45				873.91	362.46

2. Estimating the present value of these additional incomes by the application of a discount rate.
3. Aggregating the discounted additional income streams.
4. Estimating costs corresponding to the streams of additional incomes.
5. Discounting the cost-streams by an appropriate rate of discount.
6: Assessment of loss during the gestation period and its deduction from the total income streams.
7. Aggregating cost streams.
8. Ratio of discounted aggregate income stream to the discounted aggregate cost stream.

Gestation Period

Gestation period is the passage of time prior to the coming of the project into actual operation, generating incomes. For the estimation of aggregate costs and benefits it is essential to take note of the gestation period when no incomes accrue to the project though major capital investment has been made involving some fixed costs during the period like interest on capital invested, variable costs being excluded from the cost of the gestation period. Longer the gestation period the larger is the element of cost to which no income corresponds. The deep tubewells under our study started operation from the fifth year of installation, while the shallow tubewells started giving water from the first year.

The Rate of Discount

Since the incomes generated by a project are spread over time, their present value needs to the estimated by the application of a discount rate, that is, by a multiplier $\frac{1}{(1+r)^t}$, (where r is the a rate of discount and t is the period in view). In a developing economy there is a high individual time preference which very often expresses itself as preference for projects having shorter gestation period over those having longer one. Also, high time preference is reflected in high rate of discount. A distant income following a long gestation period whould have a highly discounted present value weighed against costs having no return during this period. Thus this would tend to depress the benefit-cost ratio. In fact, gestation period can be translated into a component of the benefit-cost ratio, provided we have

Table 2

Some Basic Data on Tubewell Irrigation in the Krishnanagar Block, Nadia, West Bengal

Items	Deep Tubewell	Shallow Tubewell
A. Fixed Capital Investment		(i) Cost of Tubewell (Pipe strainer sinking cost & hand pump —Rs. 902.00
(i) Drilling and cost of E. RW Pipes	Rs. 32,730.00	(ii) Cost of pump—Rs. 3660.00
(ii) Turbine pump	Rs. 10,640.00	(iii) Pump shed -Rs. 880.00
(lii) Pump-house, operator quarters, internal wiring	Rs. 17,834.00	(iv) Cost of field channel —Rs. 382.00
(iv) Water transmission arrangement	Rs. 31,480.00	
(v) Land acquisition	Rs. 500.00	
(vi) Transport and unforeseen contingencies	Rs. 2,000.00	Tot -Rs. 5824.00
(vii) Electric Transmission	Rs. 40,000.00	
	Rs. 1,35,184.00	
B. Cost.		
1. Depreciation	Rs. 4065.00	Rs. 493.00
2. * Interest	Rs. 10570.00	Rs. 466.00
3. Payment of staff	Rs. 4598.00	Self-operated
4. ** Running charge (Electricity)	Rs. 2800.00	Rs. 585.00†
5. Additional output per acre	Rs. 362.00	Rs. 362.00
C. Area served :	rising from 150 acres to 200 acres after 10 years‡	rising from 5 acres to 10 acres after 6 years‡

* Interest charges at the rate of 8%.

** On the basis of 200 acres C. C. A. with standard pattern of double cropping and early aus followed by rabi ; per acre electricity cost is thus Rs. 14/-.

† Cost of diesel-power.

‡ Assumed.

been able to ascertain the discount rate and costs occurring in the gestation period. Society being more considerate about future prosperity than individuals, social time preference is much lower than individual time preference.[1] In public investment planning, therefore, social time preference is more relevant than individual time preference. Since social time preference is actually reflected in the growth rate of the economy,[2] we could take the rate of growth of GNP (in India 5.5 per cent overall rate of growth as envisaged in the "Approach to the Fifth Plan") into consideration for discounting purposes. Taking note of the possibility of a big gap between social and individual preference and making allowance for future uncertainty we select 8 per cent as the rate of discount for the present analysis, this being a middle course. This is a rate at which interest tends to accrue on Fixed Deposits in India. This rate is applied both for discounting future benefit and costs and for estimating interest-charge-component of the project costs.

(At present interest on loans supplied to small and marginal farmers for irrigation or other purposes is 10 per cent. But as the loans are accompanied by Government subsidy of 33 per cent, the effective rate of interest reduces to 8 per cent).

Life-time of a Project

Since the aggregate incomes accruing from a project depends upon its service life-time, the length of service-life of a project would be a very important consideration in cost-benefit analysis. In the case of a deep tubewell the average life-time of all the components of the plant has been estimated at 20 years, the life-time of a shallow tubewell being 12 years.

The Computational Process

The computational process (based on above considerations) to which we subjected the data of Table 2 for arriving at appropriate benefit-cost ratios for the deep and shallow tubewells under study is algebraically expressed as follows :

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[1] A. C. Pigou, The Economics of Welfare (4th edition) ; (Macmillan, London, 1932).

[2] a. S. A. Marglin, "The Social Rate of Discount and Optimal Rate of Investment", Quarterly Journal of Economics, Vol. LXXVII, February, 1963.

b. J. Hirshleifer, J. C. Haven and J. W. Milliman, Water Supply, Economics, Technology and Policy, (University of Chicago Press, 1960).

c. A. R. Prest and R. Turvey, "Cost-Benefit Analysis : A Survey", The Economic Journal, Dec. 1965.

$$\frac{B}{C}=\frac{\sum\limits_{t=1}^{n}\frac{B_t}{(1+r)^t}}{\sum\limits_{t=1}^{n}\frac{C_t}{(1+r)^t}} \qquad (t=1,\ 2, \ldots\ldots n)$$

(Where B=benefit, C=cost, r is rate of discount and t=period)

A. Application to Deep tube wells

$$\text{Total Benefit}=\sum_{t=5}^{14}\frac{B_t}{(1.08)^t} + \sum_{t=15}^{24}\frac{B_t}{(1.08)^t}$$

$$\text{Total cost}=\sum_{t=1}^{4}\frac{C_t}{(1.08)^t}+\sum_{t=5}^{14}\frac{C_t}{(1.08)^t}+\sum_{t=15}^{24}\frac{C_t}{(1.08)^t}$$

B_5, B_6, ...B_{14}=Additional income from the irrigation of 150 acres.

B_{15}, B_{16},...B_{24}=Additional income from the irrigation of 200 acres.

C_1, C_2, ...C_4 =Interest charge only.

C_5, C_6, ...C_{14}=Depreciation+interest charge+pay of staff+cost of electricity for 150 acres.

C_{15}, C_{16},...C_{24}=Depreciation+interest charge+pay of staff+cost of electricity for 200 acres.

Rate of interest=8 per cent per annum.

Total benefit =Rs. 539,006

Total cost =Rs. 190 561

$\frac{B}{C}$ =3.11 ; Ratio of net revenue per annum to fixed capital invesement=11 per cent.

B. Application to Shallow Tubewells

$$\text{Total benefit}=\sum_{t=1}^{6}\frac{B_t}{(1.08)^t}+\sum_{t=7}^{12}\frac{B_t}{(1.08)^t}$$

$$\text{Total cost}=\sum_{t=1}^{6}\frac{C_t}{(1.08)^t}+\sum_{t=7}^{12}\frac{C_t}{(1.08)^t}$$

$B_1, B_2, \ldots B_6$ =Additional income from the irrigation of five acres.

$B_7, B_8, \ldots B_{12}$ =Additional income from the irrigation of ten acres.

$C_1, C_2, \ldots C_6$ =Depreciation+interest charge+cost of diesel 5 acres.

$C_7, C_8, \ldots C_{12}$ =Depreciation+interest charge+cost of diesel of for 10 acres.

Rate of interest=8 per cent.

Total benefit =Rs. 18,913.42

Total cost =Rs. 13,338.38

$\frac{B}{C}$ =1.42

Ratio of net revenue per annum to total fixed capital investment=8 per cent.

Implications

Comparing benefit-cost-ratios it is apparent that deep tubewells are superior to shallow tubewells. While the benefit per acre under a deep tubewell is more or less the same as that of under a shallow tubewell, the cost of operating a shallow tubewell is much higher than that of a deep tubewell. The difference in cost, again, arises from the higher cost of running shallow tubewells with diesel power. With large scale introduction of rural electrification and the energization of the shallow tubewells, the power-cost of shallow tube wells would be considerably lowered but would still continue to be higher than that of deep tubewells on the basis of per acre area served. Thus the benefit-cost ratio would still be comparatively higher for deep tubewells.

However, several other factors would explain public preference of shallow tubewells over deep tubewells. These are as follows :

1. Management of deep tubewells by Government employees is not often up to the satisfaction of the farmers concerned. (Frequent stoppages of operation and failures to supply water at the moments of needs are typical cases of inconvenience).
2. In contrast, shallow tubewells are self-operated and provide the satisfaction of private ownership and advantageous freedom of private management in conformity with individual farmers' specific needs.
3. A high rate of time-preference leads to a high degree of subjective preference for shallow tubewells which can imme-

diately start giving water, while deep tubewells take a long period of gestation prior to supplying water.

4. Inability of Governmental administration to obtain fair price of water from the farmers toward recovery of cost of operation of deep tubewells has resulted in considerable losses of public revenue. This can hardly be supported from the point of view of distributive justice.

High degree of time preference and the satisfaction emanating from the freedom of private ownership account for a high degree of subjective preference for shallow tubewells which cannot be quantified in monetary terms. These are typical issues which impose limitations on cost-benefit-analysis. Objectively, deep tubewells would be more conductive to agricultural development over time than shallow tubewells, but the former would call for a greater degree of social action and social discipline for their success including farmers' fair contribution to the recovery of cost of operation.

On the other hand it is not expected that marginal (or subsistence) farmers would come forward to undertake the risk of investment in shallow tubewells to the extent of about Rs. 5000/- even if loans for this investment are available. And when investments in such tubewells are made by taking loans it is not sure whether these loans are going to be repaid. The unrepaid loans are also a loss to the community at large comparable to the loss of public revenue in the case of deep tubewells.

Also, there are areas where only deep tubewells are technically feasible and shallow tubewells do not work. Similarly there are areas where only shallow tubewells rather than deep tubewells are technically feasible. Thus technical feasibility itself limits the choice between deep and shallow tubewells,

One of the sources of advantage of a deep tubewell is the economy of power (electricity). While the power-cost per acre of a deep tubewell is Rs. 14/-, for a shallow tubewell it would be about Rs. 70/-. In an economy where electricity is a severe constraint, deep tubewells might claim priority over shallow tubewells. The precondition of success of deep tubewells is much greater degree of administrative efficiency and social discipline than what has hitherto been experienced. The need-specific character of shallow tubewells as contrasted with the wastage arising from the possibility of inefficient operation of deep tubewells might attribute superiority to the former over the latter. It seems desirable to work out a balance as between different devices of irrigation including deep and shallow tubewells toward maximising social advantage and the contribution to overall growth of agriculture.

Relevance of Gandhian Thought to the Economic Development of South Asia

Pritish Chandra Datta*

I. Introduction

Economic recommendations require to be made with commitment to value judgements. People's attitudes and their social institutions are not standardised to an appropriate degree as they are in the West and are therefore not adaptable to economic progress. Economic and non-economic conditions are much more closely and strongly related in the South Asian countries than in the industrial countries of the West. As such the tenor and pattern of economic planning for an underdeveloped region are necessarily different from that of a developed region.

To quote Myrdal : By per capita income Pakistan and India are the poorest and Malaya is the richest country in the region. The other countries fall between these two extremes. Serious undernutrition is a general cause of low labour efficiency mainly in India and Pakistan. India is further along the road to an indigenous industrialisation. Administration and political life are marked by higher levels of efficiency and honesty in India than elsewhere. On the other hand, India's social stratification is more inegalitarian and rigid. The relationship of population to land and natural resources in India and Pakistan is less favourable. But all the countries regard themselves as underdeveloped and aim at development by economic planning and state policies.

Gandhian economic approach is to ensure economic progress without ecocomic tensions and class conflicts to establish economic harmony as a means to economic progress and moral sensitivity. According to Gandhi, economism must not be morally callous as much as moralism must not be economically ignornant. That is he, like

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Ruskin, was in for an indissoluble marriage between moral and material progress.

The Gandhian technique is opposed to the Western methods of economic development and as a traditional approach it is not likely to promote the economic progress of the country. Myrdal rebukes Indians by dubbing them better planners than executers and he urges them to discard inadequate Western economic approaches and Marxian economics and to study their own needs and problems.

It is true Gandhi did not go in for a systematic analysis of Indian economic problems. And his approach to the solution of the problem of poverty was not exclusively economic. If wide diffusion of wealth among the masses of the people is equivalent to economic progress and if it does not promote moral progress simultaneously (or if it rather dehumanizes the human society) it is no real progress. According to Gandhi, we cannot serve both God and Mammon. The Western. Satanic civilization is on the decline because in spite of modern science and industrial technique it has meant multiplication of mounting wants and moral atrophy of man. To him that civilization was irreligious. And it is no wonder that he vehmently doubted the utility of machines, barring of course his own charkha and the sewing machine. The tendencies of standardised mass production methods breed and feed on temptations of one's profit motive are in the ultimate analysis evolve such fundamental values as measure success in terms of money income or material well-being only.

II. Equality

The democratic welfare state ideology is accepted with varying radical implications in the whole of South Asia. All the Governments are committed, more or less, to the egalitarian doctrine and they have accepted economic planning as their direct concern. Social and economic equality is regarded as a very important goal.

The abysmally low consumption level of the vast majority of the people of South Asia makes against labour productivity or vigour also impedes the growth of proper attitudes towards work. There is therefore to be an increase in many types of consumption—an act equivalent to investment having its bearing (unlike in advanced economics where investment is invariably identified with the stock of physical assets) on productivity and output. Development budgets of the public sectors of under-developed countries do not in large sums represent invstment expenditure in the Western sense. Defence expenditure, though increasing the stock of assets, does not lead to capital formation. The computed Government and private consumtion expenditures per head per year average only about Rs. 200/- to Rs. 250/- for Pakistan and India, it being the lowest among the nine countries of South Asia. In the pervasive sense of insecurity throughout the region defence spending registers an enormous increase and distorts development planning by diverting the man-power available for productive activities and reducing the amount of consumer goods for household needs. There is much greater inequality in point of both quantity and quality of the components of consupmtion in the consumption levels of different income groups, social classes and urban and rural areas than in the advanced countries.

The Lorenz curve, a rough indicator of the degree of overall income inequality, shows the share of total income received by any given percentage of the population or of spending units or of income recipients. The pattern of the curves supports the general impression of greater inequality in the under developed region for both pre-tax and post-tax incomes. The curve for the developed regions lies closer to the line of perfect equality than does that for backward areas. A higher degree of equality at the lowest levels for under developed countries compares with developed economies. At the top levels the reverse is true. Opportunities in South Asia for the individual to advance, to move out of his particular location, occupation or social status are comparatively restricted. There is no high turnover of individuals in different income classes in South Asia. The opportunities for personal advancement are not reflected in the Lorenz curves.

Inequality in the rural setting is a matter of land-ownership whose concomitant is the employment of leisure, status and authority. Social stratification, an aspect of inequality, is causally related with income inequality and low average income. Low levels of income rather perpetuate and accentuate inequality of social status.

Myrdal is perhaps right when he says that the extent of overall income inequality either has remained constant over the past decade or longer or has increased, even though it is not possible to provide adequate evidence of the trends. The general impression seems to be that owing to the growing inflationary pressure the industrialists, big merchants, substantial land-owners and influential contractors have mainly benefited from the increase of national income. It is worthy of note thal the Mahalanobis Committee could not reach any definite conclusion about the trend of income distribution from 1952-53 through

1956-57 in India and also that no overall planned effort has so far been made to reduce the income disparities substantially in our country except partially through direct taxation and social security measures. It is perhaps necessary for the purpose of ensuring the beginning of a welfare state to have a comprehensive and up-to-date survey of income distribution and to plan measures in the light of its findings.

Unlike the experience of Western Europe reflecting greater inequality in the early stages of industrialisation to be counteracted at the subsequent stages by the diffusion of spread effects, South Asia requires vigorous and conscious drive towards lesser inequality as a main goal of planning. And it is pertinent to observe that greater equality would spur rather than hamper economic development.

Myrdal in his earlier book entitled 'Economic Theory and Under-developed Regions' discusses the general weakness of spread effects relative to backwash effects and the process of cumulative causation and establishes in that context the negative correlation between economic development and inequality. That is, when planning is effectual the positive correlation between economic development and inequality comes into its own due to the relative strength of backwash effects and the lack of the process of cumulative causation. As a result, there is the growing degree of regional inequality within the countries of South Asia. Again, the growing urbanization contributes to the rural-urban inequalities via wage and consumption differentials. The urban concentration ratio (.40) is higher than the rural concentration ratio (.31) in India for the period 1953-54 to 1956-57. and also that the same in some of the developed countries ; and the trend seems to be towards an increase in the degree of inequality according to the estimates of both Ojha and Bhatt and the Mahalanobis Committee.

Gandhi was a staunch advocate of the desperately poor and he said that the urban wealth "comes from the blood of the poorest." "If all men realised the obligation of service as an eternal moral law, they would regard it as a sin to amass wealth ; and then, there would be no inequalities of wealth and consequently no famine or starvation." Gandhi was the first to demand drastic changes in the social and economic order in South Asia. His egalitarianism set up a bridge between him and the younger radicals of his age.

As a practical economist out to avoid violence, he worked for equitable, yet considerable, distribution through a change of heart among the rich. To quote Myrdal ; "......by his stress on the principle of trusteeship and his friendliness towards many in exalted economic positions, he established a pattern of radicalism in talk but conservatism in action that is still very much a part of the Indian scene." In spite of planning for two decades, economic inequalities have increased in all the countries of South Asia, with the possible exception of Ceylon. For India there has so far been no realistic assessment of the realisation of the socialist pattern of society over the Plan periods in relation to Gandhi's uneducated, starving millions and also land ownership.

III Village Industry

Gandhi was set against industrialisation on the ground that it would lead to hectic search for markets and concentration of economic power. He wanted to avoid the path of industrialisation for India. Instead, by concentrating on village industries and not by effecting their wanton and wicked destruction, India would find a quiet remedy for her many ills. Industrialisation is a manifestation of capitalism and it means control of majority by a small minority involving loss of human dignity. There must not be any necessary conflict between labour and capital and he visualises a time when the rich will cease to prosper at the cost of the poor and the poor will begin not to envy the rich.

He, however, supported factory production of some machines only in the public sector. In a country where there are both unemployment and partial employment or enforced idleness for many millions of villagers expensive machines do accentuate the problem of the use of manpower by either displacing the human factor of production or not making better use of the abundant resources of labour.

Fortunately, or unfortunately, independent India has taken a decisive plunge (and almost given up the concept of manual labour oriented economy) towards industrialisation in and through her Five Year Plans, but it will not do to forget that industrialisation has meant growing urbanisation (i.e., destruction of village economy) at a heavy social cost or at the cost of overall human development. A remedy in the shape of industrialisation will only cause greater discontent and dislocation.

Gandhi is set against large scale production of things villagers can produce without difficulty for sale in cities too. As for large scale production of goods villagers would like to enjoy, he would insist on voluntary limitations of wants. And when he stipulates that mass production does not consider the real requirement of the consumer and that it rather tends to engender the problem of over-production at some points by delocalising production he merely recommends production by masses or a decentralised system of production. "Real planning consists in the best utilization of the whole manpower of India and distribution of the raw products of India in her numerous villages instead of sending them outside and purchasing from abroad finished goods at fabulous prices."

Villages is the central piece in Gandhian economic programme; and his village movement is far from a movement back to the villages in the literal sense of the term that is equivalent to depopulation of cities.

In the remaining regions of South Asia the village industries and crafts were emphasised less because their crafts were less developed and there were more favourable man-land ratios than in India. Yet the bias favouring the traditional crafts emerged during the struggle for independence. While Indian craftsman suffered more and became landless agricultural wage-earners during colonial rule, there had been significant gains in agricultural productivity in Ceylon, Malaya, Burma and Thailand.

Regarding labour utilisation Gandhi was concerned equally over its three components such as job opportunities, duration and efficiency of work. But as experience has it, even with the four-spindle hand-operated Ambar Charka effecting both the duration and efficiency of work there has rather been its under-utilization. Myrdal points to the machinations of middle men and money-lenders in thwarting the functioning of co-operatives and perpetuating the status quo more or less in all countries of South Asia.

At least for the sake of employment and spread effects the case of the village crafts is strong and in that regard it is necessary to improve their productivity and to give them market protection for some decades to come. There will therefore be the co-existence of an urban, modernised, large scale and small-scale manufacturing sector and of a rural, technologically backward cottage industry sector. And this approach will be in full accord with the requirements of realistic planning for development and with the rationality of Gandhi's economic programme.

Industrialisation of the Western countries ushered in an era of colonial rule, degradation and poverty for many countries of the world. Gandhi naively believed almost till his end that by achieving political freedom India could frame and execute an economic policy suited to her genious and requirements.

But that was not to be, for the impact of the West on India was economic exploitation, commercialisation of her agriculture and social disintegration; and this very fact brought to the fore the inevitability of industrialisation for India as the way out of poverty. Therefore, Gandhi saw an escape from the hazards of industrialisation in his constructive village industries programme being adopted and executed in India. He urged "return" to the villages in consonance with Bondaref's principle of "Bread Labour" that insists on everyone's voluntary manual labour to make his living and the consequent abolition of the indivious distinctions of rank between man and man and also the acceptance of trusteeship by the rich of their property in the public interests. He experimented with his ideas on the Tolstoy Farm and the Phoenix Settlement in South Africa.

The basic twin principles of Gandhian philosophy are truth and non-violence and Gandhi analysed any problem, economic or otherwise, from the point of view of these principles. Gandhi was interested in the whole, integrated view of human life and he consequently mixed economic, political and moral problems and sought combined solution of the overall problem of human misery. His village programme seeking to improve the existing structure and pattern is nothing short of a silent, rural revolution. May be, it is not perfectly in tune with the blue-prints of our Five Year Plans. But surely it is not an attempt at revivalism or work within the sheer old framework as it is.

It is true that his preachings could not offset the modern irresistible trends towards grandiose projects, prestigious programmes, status symbols, conspicuous consumption, price control, rationing and the like. His rejection of sophisticated modern machinery as the instrument of production on grounds of regimentation of high efficiency is something that may not be justified totally in modern times. It is perhaps best to secure a compromise or synthesis between the rival claims of larger volume of employment and higher level of employment—an attempt, however frail and faulty, as exhibited in our Five Year Plans. And if Gandhi has failed he has failed by rigidly and devotedly pursuing only one track. On the contrary, if he has succeeded with his Khadi programme it is because of his charismatic leadership. The Fourth and Fifth Plans by initiating a shift of emphasis in favour of agriculture and small industries are perhaps a fresh and distinct attempt at resuscitating and accepting Gandhian approach to planning for a densely populated, poverty-stricken country like India.

IV. Co-operative Farming

It is important to remember that the battle for long-term economic development in South Asia will be won or lost in the agricultural sector. For any scheme of economic development in principle both communist and non-communist thinkings stress the need for enthusiatic support from the masses, co-operation and decentralisation. With Gandhi democracy requires to ensure that the minimum of responsibility and power be exerted from above and that the regulation of every detail of life be withdrawn. "This attitude was related to his distrust of capitalism, industrialism, dependence on foreign trade, and urban economy and culture, and to his idealisation of the villages and their traditions of crafts and agriculture." And it was but natural that Gandhi endorsed co-operative farming for deriving the full benefits of agriculture by consolidating lands for a hundred families in a village.

Co-operative joint farming does not produce any change in property rights and yet it aims at improving conditions without disturbing the inegalitarian power structure in the villages. Its net effect is to create more inequality by by-passing the landless workers and sharecroppers and small peasants who have no security of marketable surplus to offer. In addition, community development is designed to transform a caste-oriented society into a community-oriented society, The assumption that there is a basic harmony of interest within the village hierarchy is unrealistic, though it is consistent with the Gandhian concept of village life. But it should be noted that Gandhi visualises the united village community as a co-operative organizations for agricultural production and co-operation in agriculture is incompatable with the individual operation of land. Inadequate implementation of the weak measures of land reform and tenancy legislation lies at the root of the failure of community development, a device for increasing the rate of agricultural production.

Myrdal does not consider either of the two measures—radical land redistribution and radical land consolidation—as a feasible approach to the problems of agriculture in Southeast Asia. He rather puts forward a plea for controlled capitalist farming by encouraging the progressive cultivator to reap the full rewards of less labour and enterprise, while tackling the issues of equality by different policy means. He devises a tax system that penalises non-farming, non-resident land-owners and encourages the functional use of land in terms of gains in efficiency and productivity by discarding the size of agricultural holdings as the basis of taxation. He holds that a system that allows land-owners to become ready cultivators or genuine agricultural entrepreneurs with the gradual abolition of the share-cropping system and with the allotment of small plots of land to the landless workers as individuals from out of the uncultivated waste land will attack in a realistic, pragmatic and radical manner the problems of marketable and investible surplus.

V. Gandhi, Myrdal—An Appraisal

The practical validity of Gandhian approach to the economic development of the region depends on the reality of the assumptions that he has made about the transformation of human outlook and conduct in the coming years. It is doubtful as to what extent his expectation about the limitation of individual wants and his doctrine of 'Aparigraha' or trusteeship, establishing a society free from exploitation, will be actually realised.

There was agreement between Marx and Gandhi about the relationship between the mode of production and social structure. And this very fact of the relationship urges Gandhi to propagate the doctrine of Sarvodaya i.e., non-violent socialism with its emphasis on Charkha and cottage industry. As such, he rejected the Marxian doctrine of class war and factory production in the private sector that created unemployment and greater economic inequality and thereby intensified the class war through larger accumulation.

Both Marx and Gandhi advocated the same principle of equitable distribution i.e., from each according to ability to each according to needs and in this respect there is similarity between Communism and Sarvodaya. Economic equality derives its substance basically from a sense of social responsibility of man. In one vital respect Gandhi differed from Marx—while one is out to destroy both capitalism and capitalists, the other is eager to destroy capitalism without liquidating capitalists who with their special abilities and acumen can contribute to the peaceful economic development of society in the role of trustees having a change of heart. Though Gandhi was conscious of the underlying conflict between labour and capital, he did not subscribe to the need for accentuating that conflict. His weapons for fighting the evil were non-violent non-co-operation and necessary legislation.

The Plans seem to indicate a certain bias towards small-scale industry and crafts, particularly in the villages; and in this regard Gandhi's wishes have been partially met. For the rest of South Asia there had rather been the due emphasis on modern large-scale industry and machines, though with varying success, from the very inception of their economic plans. Marx and Gandhi agree that individual freedom would be real with the withering away of the state or the non-intervention of the State. Planning of economic life would be done by the producers themselves through the decentralisation of power and in the absence of State-enforced socialism. Gandhi was anticapitalistic in his bias against the machine age and socialistic in his advocacy of greater economic equality.

Now, Myrdal agrees with Gandhi when he stresses the direct relationship between economic equality and economic development. According to both, it is possible to realise for on underdeveloped economy a higher saving ratio through income redistribution (via its inter-dependence effect). Social justice and economic progress are not only desirable but compatible.

Though it might mean for the moment a reversal of the trend towards a preference for the capital intensive technique in the industrial sector, for making economic planning a democratic and employment-oriented venture it is necessary to stress the role of village and small-scale industries, as is proposed to be done in the Fifth Plan for India. Even when they agree on this point, it to be noted that from the long run point of view of the growth of an open system it is perhaps not proper to relegate the large-scale industries to the background. Though factory production is proposed to be an exclusive function of the public sector by Gandhi, it is not settled beyond question whether the existing private sector will not do better in this field on being allowed to work within a joint sector. The problem is one of striking a correct balance between the large and small industries in the initial stage of development of an underdeveloped economy and of ensuring lower, not fabulous, prices for manufactured consumer goods in particular.

There is no gainsaying the fact that co-operative joint farming has failed in the region; but before we give it up in favour of capitalist farming, as suggested by Myrdal, we should enquire if co-operative farming has at all been given a fair trial anywhere in the region. The supply of adequate tax incentives for efficient working of the co-operatives could likewise be planned with the additional advantage that such a system would not widen the gap between the haves and the have-nots in the agricultural sector. It is, however, accepted that for any field of income generation or income-earning tax discrimination or tax incentive will tend to encourage functional inequality within tolerable limits. At least from this point of view alone capitalist farming, though large-scale, mechanized and controlled, will possibly be a worse solution of the agricultural problem. There is perhaps no justification for pursuing dual, antagonistic policies regarding increases in productivity in the industrial and the agricultural sector—i.e., reversing the present trend towards urbanization and weakening the spread effects of economic expansion in the region. Is there any certainty that it will produce a quicker increase in output without a more than proportionate increase in overheads? His prescription appears to smack of the Western approach that abstracts from modes and levels of living and attitudes and institutions and is possibly not in line with the modernization ideals of South Asia.

We are afraid that Myrdal's proposal might put the clock back. It is, to say, the least, a retreat from the ideal of the socialist pattern of society for the region. By and large, fairness must be the criterion, not wealth or higher and speedier rate of growth. If the experience with economic planning in India is any guide for the rest of South Asia and if Gandhian thought is relevant to any degree in the prevailing situation, economic growth is not enough—growth must be associated with social justice and the creation of employment opportunities for the rural proletariat with careful project selections.

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Development Through Inflation
The Indian Case

K. R. Nanekar*

I

The word 'inflation' is often used in two senses. In one sense it means inflation of something (e.g. currency or credit) as the cause of rising prices. In another sense it is used to denote the actual process of continuously rising prices. There are at least four main current theories of inflation competing with each other in economic literature. The oldest theory which has yet survived is the Quantity Theory of Money which under Irving Fisher received a detailed treatment, followed by many other versions of the same theory ; the most important being the Cambridge version and pre-General Theory of Keynes' Fundamental Equation. According to the quantity theory of money the supply of money is the causal factor in an inflationary process. This theory lost its importance as a meaningful formulation during the Great Depression. After the Second World War when most of the developed countries have achieved high rates of employment, but with inflation, this theory has been resurrected, particularly by the Chicago School. Some seeds of dealing with the problem of value of money or general price from the side of demand were already there in the Cambridge version of Quantity Theory. The Chicago school has now formulated this theory as a full-blown theory of demand for money. The theory explains inflation as a phenomenon resulting from an imbalance between the growth of stock of money and the rate of growth of output.[1] The basic postulate of this theory is that the demand function for money in real terms over a long-run is stable. "And given this function the rate of increase of the nominal stock of money determines the rate of inflation."[2]

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[1] Friedman, M. 'Monetary Theory and Policy' in 'Inflation' (ed. by Ball and Doyle) Penguin Modern Economics Readings, 1969, p. 144.

[2] Johnson, Harry C., 'Essays in Monetary Economics,' Second Edition, Unwin University Books, George Allen and Unwin Ltd., 1969, p. 122.

To other theories of inflation have a common parentage, viz. the Keynesian. One is Excess Demand theory and the other is Cost-Push theory. The former explains inflation as a process initially resulting from autonomous increases in demand of Government and/or business and/or consumers. It is followed by responsive price and wage increases. The latter explains inflation as initially resulting from autonomous increases of wage rates and/or material prices. This is followed by induced and/or supportive (compensatory) demand expansions of Government and/or of other constituents in the economy.[3] The fourth important explanation of inflation comes from a theory which combines both excess demand and cost-push versions, but at the disaggregative level. According to this theory, even if demand in the aggregate were not excessive, "a situation of excess demand in some sectors of economy balanced by deficient demand in other sectors will still lead to a rise in the general level of prices." Because "the rise in the prices in markets characterized by excess demand will not be balanced by falling prices in other sectors through rising price of materials and rising wages.[4]

II

Though the developed countries have achieved high levels of employment (compared to levels of employment prevailing before the Second World War), they have not been able to achieve high employment without inflation. Prices in these countries have been continuously rising and some of these countries have been facing balance of payments problems every now and them. In this context the theories suggest various remedies for inflation. Balancing of money supply with growth of output in some or other sense, controlling of excess demand even at the cost of employment, controlling of incomes, particularly wages and balancing of sectoral demands and supplies are suggested as some of the remedies.

When the discussion moves on to developing countries the attitude of some of the theorists to inflation becomes very liberal. Thus, according to one author, it is not the "control of inflation as an instrument of (development) policy" that should be important for these economies.[5] The developing countries, it is said, suffer from high unemployment in various forms. The basic factors in the form of stocks of capital, skilled labour, technology and efficient organisation are lacking here. The discussion of inflation is, therefore, centred round creation and/or increasing of these factors in the shortest possible time. Among these factors the most emphasized is saving and investment. Inflation is brought in as a method for increasing saving and investment. Private enterprise in these countries is underdeveloped—both in terms of its own resources and its attitude towards industrialisation. The main responsibility for development, therefore, must be borne by the Government. The Government, however, must have a hold on larger resources. It has, of course, taxation, earnings from its own enterprises and foreign aid to go. But resources from all these sources are not enough for rapid development. Deficit financing and credit creation should, therefore, be adopted as deliberate tools for creating inflation with which to break the various rigidities and dullness of the market. "Inflation", said Keynes, is a mighty tax gatherer.[6] It works by transferring incomes from those who do not or cannot save to those (private enterprise and Government) who, it is assumed, save and invest. Inspired by these theoretical formulations, the Governments in many developing countries have actually embarked on a deliberate policy of fostering inflationary forces. And the record of inflation in some of them is really staggering. Thus during a period of 1958-1963, Brazil had a price rise (wholesale) by 554%, Chile, 154%, South Korea 49%, Taiwan and Turkey 43%, Philippine 28% and so on.[7] Have these countries, as a result of inflation, achieved high rates of saving and investment and therefore high rate of per capita growth of output? According to one estimate, the less developing countries had the highest rates of growth when they were free from inflation. The growth rates became low with mild inflation and still lower with high inflation.[8] This evidence throws doubt on the strategy of development through inflation.

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[3] Machlup, F. 'Cost Push and Demand Pull' in 'Inflation op. cit.' pp. 149-176 : also an interesting essay on 'Two Views of Inflation' in the same book by S. Wientraub, pp. 60-73.

[4] Schulz, C. L. 'Sectoral Shift and Inflation' in 'Inflation op. cit.' pp. 215-216.

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[5] Quoted from Bruton's 'Inflation in a Growing Economy' by Graeme S. Dorrance in his essay on 'The Effect of Inflation on Economic Development' included in 'Accelerating Investment in Developing Economies (Ed. Agarwala and Singh), Oxford University Press, 1969, p. 351.

[6] Keynes, J. M., How to Pay for the War, Macmillan, 1940, from an excerpt included in 'Inflation op. cit.' p. 26.

[7] Baldwin, R. E. 'Economic Development and Growth,' Wiley Eastern Private Ltd., 1971 p. 97.

[8] Dorrance Graeme S. in 'Accelerating Investment, op, cit.,' pp. 352-353.

Inflation has continuously plagued the Indian economy during the period of planning. Except during the First plan when the prices showed a somewhat downward trend, inflation has been with us all these years.[9] Even the fall in prices during the First Plan must be seen in the context of substantial inflation which preceded it during the pre-plan period. It is true that wars and droughts have aggravated inflationary pressures.[10] But, it would be unrealistic to say that in the absence of these factors, inflation would not have been there. The Second Five Year Plan which was free from wars and droughts demonstrated that a large-scale attempt to industrialise the economy under 'money illusion' must generate inflationary forces. Had prices, all these years, increased at a steady rate of about 1 to 2 per cent per annum, there would have been nothing to worry about. For inflation any way, cannot be eliminated from the developmental process occurring in the Indian conditions. Inflation in India, however, has been at times going on at a very high rate.[11] In recent years, it has assumed dangerous proportions, requiring such drastic steps as the Government take-over of wholesale trade in wheat. It would, therefore, be of some interest to analyse the approach of various plans to inflation.

III

One thing that strikes our attention in all the plans is that all of them consider inflation to be unavoidable. Thus, said the First Plan,[12] "the process of development has always inflationary possibilities".(p.39) The Second Plan was more clear in propounding the philosophy of unavoidability of inflation. Assuming that the Government was prudent in the management of financial resources, it said that "no amount of prudence in financial management can by itself eliminate completely the risk of inflation in an economy attempting to develop rapidly." The Plan, in fact, advocated a policy of inflation by saying that "playing safe" (i.e. not having inflation at all) is not conducive to development. (p. 86). The Third Plan followed the Second Plan in its approach to inflation. "Certain upward pressures on prices are implicit in development and they have to be accepted." (p. 126). Without defining what price stability exactly means, the Draft Outline of the Fourth Five Year Plan thought "price stability in a total sense is neither possible nor desirable". (p. 32). The Approach to the Fifth Five Year Plan[13] takes inflation to be inconsistent with the objectives of the Fifth Plan, but does not think that inflation is avoidable. (p. 50).

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[9] The other years when the prices (wholesale prices for all commodities) were stable and showed a decline were 1960-61—1961-62 and 1967-68—1968-69 respectively. See 'Basic Statistics Relating to the Indian Economy.' Statistics and Survey Division, Planning Commission, Government of India, Dec., 1970, Table 7, p. 20.

[10] The increases in prices on account of drought or when the economy is moving from depression to full-employment are treated by some economists as a part of the "normal working of the competitive system." For in the nature of things, they are said to be self-limiting. Johnson, H. G. 'op. cit,' p. 104.

[11] Thus the general index of wholesale prices rose by about 3 points during 1956-57—1957-58 but by 20 points during 1965-66—1966-67 and 1966-67—1967-68. The recent price rise has been sharper than ever before. The general price index rose by more than 39 points in one year, from may 1972 to May 1973.

[12] All the page numbers in brackets at the end of quotations are from the Plans published by Planning Commission, Government of India.

The second thing that may be noted about all the plans is that they describe excess demand in money terms to be the primary cause of inflation. Thus, according to First Plan, "in the early stage, a development plan necessarily increases money incomes more than production. If these incomes are allowed to raise current consumption expenditure, they act immediately on prices." (p. 37). This is a somewhat narrow version of excess demand in that it is treated only in terms of consumption expenditure (ignoring investment expenditure). "Rising pressure of demand" said the Third Plan, "resulting from growth of population and money incomes offered the major explanation of the continued uptrend in wholesale prices." (p. 123). The Fourth Plan thought inadequate increases in availability of food and essential commodities as well as continued increase in domestic expenditures, both public and private, to be the main cause of large price increases." Thus, coming to the same view that excess demand is the primary cause of inflation, though it also vaguely saw "the spiralling of costs, prices and incomes through mutual interaction." (p. 18). The Approach to the Fifth Plan accepts the position of the earlier plans, though it somewhat tends towards ambiguity when at one time it makes excess demand the primary cause leading to cost inflation, and, at another, makes cost-inflation, the primary cause. (p. 50).

The third thing that may be noted about all the Plans is that they ascribe excess demand to credit-creation for private sector and deficit financing for the Government. The First Plan looked upon the problem of excess demand mainly in terms of creation of credit by private institutions for private sector. (p.37-39). It, however, saw the danger or deficit financing. (p. 51). The term 'deficit financing' was used to denote "the direct addition to gross national expenditure through budget deficits, whether the deficits are on revenue or on capital account." Further, "the essence of such a policy lies in the Government spending in excess of the revenue it receives in the shape of taxes, earnings from state enterprises, loans from the public deposits and funds and othe miscellaneous sources." The Government could cover the deficit by (i) running down the accumulated balances, or (ii) borrowing from the banking system, mainly from the central bank. (pp. 59-60). The First Plan did not want to have a link-up between Government deficit financing and private credit creation and wanted that the former "should not also be expected to provide the elasticity in money supply which must really come through the credit system." The Second Plan accepted the definition of deficit financing given by by the First Plan, and clarified it by limiting it to (i) withdrawal of cash balances by the Government, and (ii) short-term floating debts of Government financed by the Central Bank. As far as the long-term borrowing from the banking system is concerned, it thought that its effect should be assessed in terms of overall additional money-creating capacity. (pp. 83-84). The plan pleaded for prevention of excessive private credit creation. In both plans a part of the deficit was linked up with foreign exchange reserves which implied a purchasing power over the goods from other countries. This part of deficit was not treated as undesirable, though the Second Plan wanted that the foreign exchange reserves and deficit financing account should be kept separately. The definition of deficit financing as evolved in the first two plans continued to be accepted by the later plans with some modifications.[14] The Third Plan recognised a definite role of deficit financing in development but expressed its inability to estimate the limit of "safe deficit financing." Like the earlier plans it recognised private credit as another important source of inflation. Since by now there was hardly any foreign exchange reserves left, the link between these reserves and deficit financing was necessarily broken (pp 99-100). The Draft Fourth Plan also recognised Government deficits and private credit as two important sources of excess demand and wanted a complete eschewal of deficit financing. (p. 32). In the Fifth Plan Approach paper the emphasis on private credit has become less, and excess demand is mainly ascribed to deficit financing. Deficit financing, according to Approach, will be "kept down to the level at which the consequential increase in money supply with the public and aggregate demand will not exceed the requirements of the economy arising from growth in real terms." (p. 50). To sum up, all plans recognise deficit financing as the most important source of excess demand, and therefore inflation.

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[13] All references to Approach to Fifth Plan or Approach Paper are to "Approach to the Fifth Plan 1974-79" and not 'Towards an Approach to the Fifth Plan'.

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[14] Deficit financing from the Third Plan includes both short-term and long-term indebtednesses of the Government to the Reserve Bank of India, Refer, 'Basic Statistics Relating to the Indian Economy, op. cit.,' Explanation (q), Table 44, pp. 65-66.

The fourth thing that may be noted is that all plans recognise the bad effects of inflation on the economy, either in terms of growth or in terms of equality. Over the plans the description of these consequences has become more elaborate. Thus, the First Plan thought that inflation's incidence on those classes whose incomes are fixed would be unfair. (p. 39). The Third Plan considered the consequences from a broader angle. Inflation reduced the real content of the plan. It led to misallocation of the resources. It harmed the interests of those with fixed incomes and unless these persons gladly accepted a cut in their real earnings, inflation would lead to further inflation through higher demands for money incomes. (p. 127). The severest denunciation of inflation is, however, to be found in the Approach Paper. It has prepared an unequivocal charge-sheet against inflation almost treating it as an anthropomorphic entity. "It (inflation) tends to accentuate inequality, discourages exports, induces unavoidable imports and pushes resources into socially wasteful uses such as real estate, luxury housing, speculative inventories bullion and jewellery and clandestine foreign exchange balances. It enlivens speculation, stimulates inessential and conspicuous consumption and generates a climate of industrial strife and instability." (p. 50). In short, inflation is held responsible for almost all the evils which have so far thwarted the attempts of the economy to grow with justice. The sum up, the main evil effects of inflation are described in terms of (1) general stability (a precondition for growth), (2) saving and productive investment (a basic factor in growth), (3) foreign trade and balance of payments (a limiting factor in growth), and (4) equality in the distribution of wealth and incomes (a professed goal in most of the plans).

Since inflation is unavoidable but has evil consequences, all plans talk of "corrective action" or "safeguards" against inflation. Thus, the first Plan said that "the accent of Fiscal Policy must throughout be on minimixing inflationary pressures." (p. 39). And the Approach to the Fifth Plan comes to the conclusion that "proper formulation and implementation of the Plan requires that effective safeguards, are provided against inflation." (p. 50). The safeguards, according to Plans, are to work through Monetary and Fiscal Policies and Direct Controls exercised through Licensing and Price Policies and other Restrictive policies. The Plans emphasize certain types of organisations like co-operatives and even advocate direct entry of Government into private sector in certain spheres Since all plans are concerned with growth, they emphasize increase in outputs by bringing about various financial, organisational and structural changes. All plans particularly emphasize increases in the production of essential goods. Thus, according to the First Plan. "deficit financing can be countenanced to the extent there is an assurance of steady supplies of the essential commodities of consumption. (p. 61). "A major safeguard is building up of sufficiently large stocks of foodgrains in order to counteract inflationary pressure". (Second Plan, p. 86). One of the crucial tests for the Third Plan was the extent to which the production of food and raw materials could be increased. (p. 117). Attainment of targets for agricultural production is of basic importance to price stability. (Draft Fourth Plan, p. 17). "In order that the expanded money incomes of the poor may have a commensurate impact on the living standards, pulses, edible oils, standard cloth and cooking fuels are made available at reasonably stable prices." (Approach to Fifth Plan, p. 50). Though, on the whole, the plans are optimistic about the working of the safeguards, the Third Plan doubted the efficacy of the safeguards when it said that "balances and safeguards notwithstanding, the possibilities of significant and even disturbing price rises cannot be entirely eliminated." (p. 125).

IV-

Five Year Plans' approach to inflation may be summarized in the following propositions : Inflation is unavoidable. It is caused by excess demand which is mainly caused by deficit financing by the Government.[15] Inflation has adverse effects on both growth and equality. Safeguards can or should, therefore, be provided which, even with inflation, would enable the economy to achieve the goals of planned development.

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[15] Five Year Plans' approach to inflation is similar to Keynesian excess demand theory, though in the Approach Paper (Fifth Plan) there is also a suggestion of another Keynesian theory, i.e. cost-push (Approach to Fifth Plan, p. 50).

It is easy to explain why inflation is unavoidable in the Indian situation with the theoretical framework developed in the plans. Since deficit financing is deliberately included in plans, the result of plans must be inflationary. There is, however, another aspect of the plans that must not be lost sight of. The ex post deficit in most of the plans have exceeded the ex ante deficits.[16] This means that not only have the deficits been planned, but they have also come as an easy tool with which to balance the Government accounts in responses to inflationary forces let loose by the planned deficits. Thus, planned deficits lead to inflation, and inflation leads to unplanned deficits. And both inflation and deficit financing are unavoidable. There is no way of getting out of this vicious circle unless both deficit financing and inflation are eliminated at the same time. Helplessness in breaking this vicious circle is expressed by saying that inflation is a worldwide phenomenon. What is perhaps implied in this statement is that 'all over the world'[17] the 'deficits' have been accepted as a part of the strategy ,for either maintaining huge employment or creating more employment. The result, following deficits, therefore, must be the same everywhere. This analysis, it is clear, tends towards fatalism and, therefore, complacency. It also hides more than what it reveals.

It may be noted that deficit financing as defined in the plans does not include 'public borrowing'. The net inflationary impact of this source, however, must be considered when so much weight is put on deficit financing as a generator of inflation. Another source of inflation that must be considered is the creation of credit by lending institutions for private sector.[18] Some plans have, of course, emphasized this as an important source of inflation. But since the control of credit lies with the Reserve bank and this Bank, it is presumed, is doing its job excellently, the plans, on the whole, have emphasized excess demand to be mainly the result of deficit financing by the Government. Yet another source of excess demand which has not received adequate attention in the plans is the existence of Black Hoards. These hoards are partly the result of inflation caused by deficit financing and credit creation. But once they have been formed they assume an autonmous character. The withdrawals from these hoards by private sector have the same effect as the withdrawal of cash balances by the Government which is included in the definition of deficit financing. The Approach to the Fifth Plan describes corrupt practices by management, blackmarketing and profiteering, abuse of quotas permits and licences, tax evasion and restrictive practices by monopolies as important sources of excessive incomes. It is these excessive incomes which continuously feed the stock of black money. Thus, deficit financing, credit creation and stock of black money constitute three important sources of excess demand and cause inflation. But to say that inflation is caused by excess demand does not bring out the failure of assumptions on which the economics of development through inflation rests.

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[16] Thus, during the First Plan the estimate for deficit financing was for Rs. 290 crores; the actual came to Rs. 333 crores. In Second Plan the estimate was for Rs. 1200 crores; the actual came to Rs, 954 crores. During the Third Plan the estimate was for Rs. 550 crores; the actual came to Rs. 1133 crores. In the Annual Plans the story of ex post deficits exceeding ex ante was repeated. (Refer to 'Basic Statistics etc. op. cit.' p. 65). This tendency has become stronger during the Fourth Plan. The Central Government's budget for 1972-73 anticipated a deficit of Rs. 251 crores. The actual during this period was more than three times the budgeted deficit.

[17] 'All over the world', of course, means the world of mixed economies.

[18] A loose control over the ultimate use of credit has led to a large diversion of resources either from plan-priority uses to non-plan priority uses or from productive uses to consumption.

V

The case for deficit financing and credit creation is based on the assumption that they by causing inflation transfer income from those who do not or cannot save to those (private enterprise and Government) who save. But the latter also consume. Hence the prescription for the Government that (1) it must restrict consumption of the benficiaries of inflation ; (2) it must direct the resources of beneficiaries towards investments as determined by plan priorities ; (3) it must get a large part of the additional incomes earned by beneficiaries (through inflation) for its own productive use ; (4) it must restrict its own unproductive consumption, and (5) it must use its own resources in such a manner that the investments fructify at the earliest—so that the gap between demand and supply initially created by deficit financing is soon bridged. If these processes go on efficiently, the need for deficit financing (and consequent inflation) as a deliberate tool of policy soon becomes unnecessary. What has happened in the Indian situation is that the assumptions regarding these processes have failed. The Government has not been able to curtail the consumption of beneficiaries of inflation. It has not been able to prevent the flow of resources into the production of luxury goods. It has not been able to raise the maximum resources for itself. Not only have the tax arrears been allowed to mount up and tax avoidance and evasion not checked, but the Government has also not been able to raise the resources from agriculture in which enormous gains have been made as a result of inflation. Further, the Government has failed to keep its own unproductive consumption in check. It has also allowed lethargy in the completion of projects of importance and worked them in such a manner that their surplus-creating capacity has remained limited. It is the failure on all these fronts which has made deficit an unavoidable adjunct in the planning process. And so also inflation in so far as it is the result of deficit financing. Deficits which are planned for success of plans are, in fact, the result of failures.

Finally, the broader implications of the policy of development through inflation may be noted. All plans have emphasized that safeguards should be provided to counteract the worst effects of inflation. One major safeguard which has been recommended in all the plans is the maintenance of stable prices of goods of mass consumption. The experience during the period of planning, however, shows that it is the prices of these goods which have shown the highest increases, implying a complete failure of this major safeguard. This was led to a wage-price spiral, a further aggravating factor in an already inflationary situation. The situation recently has become so explosive that the Government has been forced to takeover wholesale trade in one essential commodity, i.e. wheat. The ultimate solution of this problem, however, lies in substantially increasing the production of essential goods. But is it possible to do so unless the production and consumption of luxury goods is curbed ? The release of resources from the luxury sector is, however, bound up with the reduction in inequalities in the distribution of wealth and incomes. In the face of these inequalities, even the public infrastructure, built at a great cost of continuously lowering the standard of living of a large number of people, has been utilized more for producing luxuries than for producing goods of mass consumption. Inflation has acted as a catalictic agent in further increasing the inequalities leading to a further diversion of resources from necessities to luxuries. This has made the problem of maintenance of stable prices of essential goods still more difficult. In the absence of stability of these prices, it has become impossible to undertake a large-scale programme of development—which alone can offer a solution to the problem of widespread unemployment and poverty in the country. Attempts to finance a large-scale programme of development through deficit financing, without reducing the consumption of those in high income brackets in private sector and Government, has resulted only in further increasing the prices of essential goods. And in the face of continuously rising prices of these goods even the public distribution system has become quite ineffective.

Some other consequences of inflation may also be noted. Inflation by restricting the scope of exports and encouraging even unwanted imports in the past, has implied a dependence of the economy on foreign aid—whose brunt in the form of interest charges and repayment will have to be borne by the economy for a long time to come. Over the plans the flow of foreign aid has declined and this has necessitated Herculean efforts to increase exports and restrict imports. The former has implied more and more concessions to exporters, while the later has meant further strengthening of the existing monopolies and creating of new ones with foreign collaboration as a part of the programme of import-substitution. Inflation also has, in the past, made devaluation of Indian Rupee necessary, whose export-increasing capacity was short-lived, while whose import cost raising effect has been permanent. There is enough evidence to show that the economies following the path of development through inflation have also been the victims of monopolies, indigenous and foreign. They have also been able to pull on somehow because of support they get through foreign aid.

The Approach Paper's verdict that inflation is inconsistent with the goals of the Fifth Plan (removal of poverty and self-reliance) is, therefore, quite meaningful. But how does it matter ? The Approach itself allows for deficit financing in the Fifth Plan ! And the hope that the deficit financing will be "kept down to the level at which the consequential increase in money supply with the public and aggregate demand will not exceed the requirements of the economy arising from growth in real terms" (p. 50) does not mean much in an economy where the practice of planning has lost all touch with the pronouncements made in the plans.

Such stuff as 'distribute all and eat all' bragged about by Lin Piao and other political swindlers on the pretext of 'showing attention to the well-being of people' is only a refurbished version of 'undiminished proceeds of labour.'

—News From China

ECONOMIC AFFAIRS

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Development in Bangladesh

The recent political turns in Bangladesh have caused much worries and anxieties to India. For Bangladesh, which was an integral part of prepartitioned India, is a close neighbour to this country and to her liberation movement India's contribution was the highest. The two countries by an unwritten pledge had been working cooperatively in all fields of common activities. Sheikh Mujib who was the father of Bangladesh was perhaps second only to Subhas Chandra Bose as the greatest Bengali nationalist. Daring and dynamic as he was, the whole country rose to revolt under his leadership which ended in the Proclamation of Independence Order on 10th April 1971 vesting in him all executive and legislative powers as the President.

Since then events have moved like a movie. Such profound was the acceptance of Mujib by the people and the constitutional limit vested in him that if he would have wished he could rule the country as a dictator. But he had lived on commanding democratic heights. Willingly he took upon himself as the President to promulgate on 11th January 1972 the Provisional Constitutional Order to give his exploited countrymen a constitutional democracy. On 23rd March 1972 the Bangladesh Constituent Assembly Order created the 430-member Constituent Assembly which adopted the Constitution of the People's Republic of Bangladesh on 4th November 1972. On 7th March 1973 the first general election was held. Out of 300 seats Mujib's party (Awami League) won 291 seats. In fact the people voted for Mujib as the symbol of four ideals : Nationalism, Socialism, Democracy, and Secularism.

That was perhaps the beginning of Mujib's trouble. Mujib was a great admirer of Subhas Chandra Bose. But perhaps to catch up with the tempo of the time he overlooked this great nationalist's prescription that there cannot be any harm in adoption of "transitional" dictatorship as an alternative to the communist countries' ideologically canonized unrepresented permanent dictatorship by a country which lacks high and unbroken tradition of nationalism. The transitional dictatorship will be the tool for rousing nationalism and implementing the strategy of socialist programmes and policies as it can create national political pressure where need be. Subhas Chandra Bose foresaw that for a "new" country the Western form of democracy would only multiply poverty and create both "leftists" and "rightists" who would force open the frontiers of the country for foreign powers politics as an agent of promoting foreign ideology or as a force of counter-pressure. This situation would eventually degenerate into personal dictatorship.

Subhas Chandra Bose's prediction has come down to all the "new" countries, in some form at least, but very largely to Bangladesh through the very-same nationalist hero, Sheikh Mujib !

The alien political parties, the socalled Leftists, and the power-mad, the socalled Rightists, taking advantage of the "democratic rights" spoiled the Bangladesh economy, which had hardly found a year respite to rehabilitate the Pak-twisted economic institutions. Actively these parties whipped up anti-Mujib feelings in the minds of the hungry people. Subsequent developments establish that they were far too successful. A look into Bangladesh economy will show that the country had in 1972-73 gross domestic product which was 12-14 per cent lower than what it had in 1969-70, i.e. before the liberation. The per capita GDP was down by about 20 per cent compared with three years earlier, and between 1969-70 and December 1974 the Consumer Price Index in Dacca increased over four times. Price of rice sold was at Tk 400 per maund. Inflation as a means of development had failed miserably keeping on its trail depravations and denials, built on them a world of luxury for a few and a place for power politics for a fewer still. Political murders and distrust became a common feature. As the last hope Mujib declared Emergency on 28th December 1974.

The Pro-Moscow Bangladesh communists' pressures plus the waves of exacting conditions were so severe that Mujib had lost his nationalist democratic character and advanced a half-way to work with the Pre-Moscow communists as would be evidenced by his resorting to a number of Constitution amendment acts, under many pretexts, as a step forward to consolidate all power in his own hands. He had no words of sincere sorrow in his mouth in negating the logic of separation of powers, making the entire judiciary his lackey, depriving the people of their "fundamental rights", and dissolving all the political parties to form a National Party.

The Constitution by stages of amendments took the Presidential form of government, of course far from the American model. It aimed at making Mujib and had successfully made Mujib an autocrat President. On 6th June 1975 the National Party was formed and it was named the Bangladesh Krishak Sramik Awami League. Mujib obviously became its Chairman. Such was the constitution of the national party that everything ran on the personal pleasure of the Chairman. The consolidation of power was thus complete on national plane.

Unknowingly by his political, personal, administrative and economic processes Mujib created a number of sworn personal enemies in the army ; and perhaps equally unknowingly he alienated himself from the people. A few army men of junior rank rose to a coup on 15th August 1975, when India was celebrating her Independence Day Anniversary. Mujib and almost all his family members were killed and a "civil government" was installed simultaneously. It fell on 2nd November 1975 by a counter-coup. Almost immediately before the counter-coup there had been killings of some of the Mujib's top associates in a prison. Then again another counter-coup on 7th November 1975. Conditions there are still in a floating stage.

It is not our point to comment anything on the internal affairs of Bangladesh. We do not like to warn the developing democratic countries to learn lessons from the political developments of that country. What we want to emphasize is that there are reasons to fear that India will lose, at least for a good many years, one of her important trading partners. The Commerce Minister stated that India's trade deficit may be wider in 1975-76. If Bangladesh is lost to India the deficit will be wider further. Politically, the eastern frontier becomes unsafe. With vast common frontier with Bangladesh and being depended on her for many consumer goods, West Bengal will be the hardest hit.

A Note on Jute Growers' Price Response

Asim Kumar Chatterjee*

This note studies the jute farmers' reactions to price changes. These reactions are assumed to have been reflected on the acreage of jute cultivation only. There may be side-effects of price changes, but we limit our study to the acreage of jute grown simply because we want to know the supply elasticity. It is our reading that the supply elasticity is low and it is operative within a narrow range of prices. It has been found that there exist an upper limit and a lower limit of the acreage of jute cultivation. These limits are set not by prices alone, but by several other considerations.

In order to enquire into this matter we made a grass-root survey of twenty growers each in three *mouzas* of Malda district, a jute growing belt of North Bengal. The *mouzas* and villagers were selected on the basis of random sampling. We approached the growers with a set of questionnairs designed to draw their views on this issue. It is our finding that contrary to popular belief the peasants do calculate, perform the economic calculus of costs to be incurred and expected benefits to the received before deciding on the acreage of jute or paddy cultivation. This would be no exaggeration to say that peasants try to draw up a cropping programme on which plots jute and paddy would be grown. Before taking such a decision they consider a multiplicity of factors like soil, climate, environment, crop-rotation scheme, cash needs, expected prices, etc. In other words, a host of techno-economic facts are taken care of, though in a crude manner.

It is noted that the area under jute shows a general tendency to fluctuate in response to price-variations of jute with some time lag. The Indian Statistical Institute in a study (Indian Economy in 1970-71 : A Preview) on this trend during 1960's observed that "if we exclude the drought years of 1965-66 and 1966-67, we find that area under jute in general varied along with the prices in the preceding year." More

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correctly, as Mr. M. Nerlove argued "farmers react not to last years' price, but rather to the price they expect, and this expected price depends only to a limited extent on what last year's price was." If we assume that expected prices are revised in accordance with the error the farmers made in predicting prices last year, Nerlove argued that they were a function not only of actual prices last year but also of the prices expected last year. Public memory is short and the farmers consider ex-ante and ex-post prices of last year and/or year before last.

Of course, there are some exceptional years when the peasants' behaviour with respect to prices may seem to be inconsistent. For example, in 1971-72 the area under jute cultivation suddenly increased disproportionately. This was because the farmers expected a higher price and rightly so, as there was political instability and economic disruption in the Bangladesh economy. From the next year, however, there had been a steady decline in the jute cultivation because the farmers did not get a remunerative price whatsoever.

. This was particularly marked in 1973-74 and 1974-75 when the relative price of paddy had gone up. (See Table I).

Jute and aus paddy are competing crops in our area under study. So the farmers there calculate comparative costs of cultivation of jute and aus and try to estimate expected relative prices of both before deciding on acreage of jute cultivation.

On the basis of the participant's observation on the Survey we can say that it is very difficult to estimate a uniform rate of the cost of cultivation. Actually cost data differ from man to man, from plot to plot. We have however endevoured to arrive at a consensus and reached the conclusion that the cost of cultivation of jute is slightly more than double the cost of cultivation of aus paddy, The larger outlay made for jute cultivation is mostly due to human labour. Roughly speaking, jute requires double the amount of human labour (if not more) employed on paddy cultivation whereas the input of cattle labour is only a little more for jute than for paddy. We have collected data for cost of cultivation item-wise for jute and aus paddy. These figures are shown in Table II.

According to the Economic Research Section of Indian Certral Jute Committee (now defunct) "Jute requires a heavier outlaw in men and material and more cash money than that paddy cultivation needs. The average cost difference between jute and paddy, being half the corresponding cost of jute". The cost of cultivation data referred to was collected from Samsi region of Malda district. This area roughly

Table I

Prices of Jute (Tosha, bottom grade) and Aus (rice) per maund (48 Kg=1 md) in Samsi (Malda).

	1968-69 (1)	1969-70 (2)	1970-71 (3)	1971-72 (4)	1972-73 (5)	1973-74 (6)	1974-75 (7)
Jute	79.78	59.78	62.35	62.10	76.50	54.40	71.88
Aus (rice) average of Sept., Oct., November	50.55	58.84	56.77	59.82	57.43	96.92	112.03

Acreage of Jute Cultivation (In thousand)

Malda	21.2	60.2	57.9	*65.5	58.9	37.7	35.2
West Dinajpur	104.2	167.2	151.8	*155.9	150.2	98.00	71.00

* The year of Bangladesh liberation movement.

Chandiprasad Mouza (J. L. No. 52) Total area 247.96 acres (Malda Dist.)							
Jute	N. A.	55.00	50.00	95.00	55.00	50.00	9.00
Aus	N. A.	120.00	105.00	107.00	102.00	133.00	103.00
Salabatpur Mouza (J. L. No. 83) Total area 630.71 acres (Malda district)							
Jute	N. A.	90.00	85.00	155.00	50.00	40.00	35.00
Aus	N. A.	100.00	95.00	102.00	91.00	175.00	196.00
Chhabilipara Mouza (J. L. No. 65) Total area 824.55 acres (Malda district)							
Jute	N. A.	200.00	192.00	300.00	200.00	135.00	N. A.
Aus	N. A.	245.00	297.00	268.00	213.00	135.00	N. A.

N. A. Not available.

Source : J. C. I. and B. D. O. (Ratua)

corresponds to the area under our investigation. Since 1961-62 the labour rate has increased by 125 per cent (approximately)., from Rs. 1.44 to Rs. 3.25. If we inflate the cost of cultivation data by 125 per cent, the relevant figures would stand as shown in Table III.

(Continued on page 473)

Trend-Analysis of Women Employment in India in the Organised Sector, 1962-1973

Prakash Chandra Verma*

This study is an attempt to analyse the trend of employment of women in India in the organised sector, both macro and micro, on the basis of time series data. The organised sector includes all establishments in the public sector and non-agricultural establishments employing 10 or more workers in the private sector.

Mecro Trend of Employment of Women

The basic approach of this study is that the macro trend* ($Y=12.05+2.331X$) of employment of women in India in the organised sector is increasing one. In other words, the employment of women in India in the organised sector has shown increasing trends during March 1962-September 1973. The proportion of women to total persons employed in the organised sector has increased from 10.9 per cent in March 1962 to 11.2 per cent in September, 1973.

The employment of women in the organised sector of the economy has been increasing at a faster rate than the increase in the total employment. Between 1962 and 1973, while total employment increased from 125.8 lakhs to 188.6 lakhs, i.e. by 49.22 per cent, that of women increased from 13.7 lakhs to 21.13 lakhs, i.e. by 54.12 per cent. However, this condition was not maintained during March 1970-September 1973 when the total employment in the organised sector of our economy increased from 163.5 lakhs to 188.6 lakhs, i.e. by 15.35 per cent, that of women increased from 18.86 lakhs to 21.13 lakhs, i.e. by 12.04 per cent.

The present study shows that the macro trend* ($Y=3.045+1.798X$) of employment of women in public sector of our economy is an increasing one. Further the macro trend* ($Y=9.005—0.532X$) of employment of women in private sector of our economy is also an increasing one. In other words, the employment of women in both public and private sectors of our economy has shown an increasing trend during March 1962-September 1973. However, the employment of women in public sector has been increasing at a faster rate than the increase of employment of women in private sector. Between March 1962 and September 1973, while total employment of women in public sector increased from 4.84 lakhs to 10.41 lakhs, i.e. by 115.08 per cent, that of women in private sector increased from 8.87 lakhs to 10.72 lakhs i.e. by 20.86 per cent. The employment of women in public sector of our economy increased by 40.9 per cent during March 1962-March 1966, 18.6 per cent during March 1966-March 1970 and 28.7 per cent during March 1970-September 1973, that of women in private sector of our economy increased by 23.90 per cent during March 1962-March 1966,—2.09 per cent during March 1966-March 1970 ; and —0.37 during March 1970-September 1973.

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This study shows that private sector of our economy employs a larger number of women than public sector, viz, the employment of women in private sector was 10.72 lakhs at the end of September 1973, that of women in public sector was only 10.41 lakhs. But the share of private sector in total number of employment has shown decling trends.

The number of agricultural labourers has also been increasing steadily, from 1.4 crores in 1951 to 1.5 crores in 1971. The number of women employed in plantations has also shown increasing trends. Between 1951 and 1970, their percentage in the labour force increased from 40.4 to 44 in coffee plantations, and from 22.1 to 35 in rubber. In tea, between 1961 and 1970, women's percentage in labour force increased from 44.7 to 47. In factories, their number increased from 2.9 lakhs in 1951 to 3.9 lakhs in 1971. The total number of women employed in organised industries in 1971 amounted to 10.9 lakhs or 3.3 per cent of total women workers. Only in mines their number declined from 1 lakh in 1961 to 0.75 lakh in 1971 which represents a long term trend which began before the ban on underground work for women. With all these changes, women in white-collars occupations constituted less than 3 per cent of total women workers in 1971.

Micro Trend of Employment of Women

In the present study, micro trend* of the employment of women in the organised sector during March 1962-September 1973 continued to be in upward direction in Andhra Pradesh ($Y=1.155+0.013X$).

Bihar ($Y=0.655+0.065X$), Gujarat ($Y=0.565+0.112X$), Haryana ($Y=0.10+0.09X$), Kerala ($Y=1.085+0.406X$), Madhya Pradesh ($Y=0.67+0.06X$), Maharastra ($Y=1.195+0.363X$), Karnataka ($Y=0.325+0.217X$), Punjab ($Y=0.30+0.053X$), Rajasthan ($Y=0.220+0.071X$), Uttar Pradesh ($Y=0.475+0.205X$), West Bengal ($Y=1.405+0.182X$), and Union Territories—($Y=-0.005-0.286X$). However, micro trends* of the employment of women in the organised sector during March 1962—September 1973 continued to be in downward direction in Assam ($Y=2.603-0.096X$), Orissa ($Y=0.410-0.039X$), and Tamil Nadu ($Y=1.98-0.005X$).

State-wise Assam was on top in respect of number of women employed followed by West Bengal, Maharashtra and Tamil Nadu at the end of March 1962. Rajashthan was employing the smallest number of women in March 1962. However the proportion changed in 1973. Maharashtra was the leading state in terms of number of women employed followed by Kerala, Tamil Nadu and Assam at the end of September 1973.

This study shows that micro trends* of the employment of women in public sector during March 1962-September 1973 continued to be in upward direction in Andhra Pradesh ($Y=0.32+0.075X$), Assam ($Y=0.07+0.018X$), Bihar ($Y=0.18+0.107X$), Gujarat ($Y=0.255+0.1X$), Haryana ($Y=0.07+0.07X$), Kerala ($Y=0.125+0.162X$), Madhya Pradesh ($Y=0.3+0.105X$), Maharashtra ($Y=0.39+0.294X$), Karnataka ($Y=0.155+0.117X$), Orissa ($Y=0.105+0.01X$), Punjab ($Y=0.23+0.047X$), Rajasthan ($Y=0.115+0.047X$), Tamil Nadu ($Y=0.425+0.17X$), Uttar Pradesh ($Y=0.375+0.135X$), West Bengal ($Y=0.1-0.13X$), and Union Territories ($Y=-0.05-0.227X$).

In the present study, micro trends* of the employment of women in private sector during March 1962—September 1973 continued to be in upward direction in Gujarat ($Y=0.31+0.012X$), Haryana ($Y=0.03+0.02X$), Kerala ($Y=0.96+0.244X$), Maharashtra ($Y=0.805+0.069X$), Karnatak ($Y=0.17+0.1X$), Punjab ($Y=0.07+0.006X$), Rajasthan $Y=0.105+0.024X$), Uttar Pradesh ($Y=0.1+0.07X$), West Bengal ($Y=1.305+0.052X$), and Union Territories ($Y=0.045+0.059X$). However, micro trends* of the employment of women in private sector during March 1962-September 1973 continued to be in downward direction in Andhra Pradesh ($Y=0.835-0.062X$), Assam ($Y=0.533-0.114X$), Bihar ($Y=0.475-0.042X$), Madhya Pradesh ($Y=0.37-0.045X$), Orissa ($Y=0.305-0.049X$), and Tamil Nadu ($Y=1.55-0.273X$).

As regards the shares of public and private sectors in total women employed in each state the private sector employed a larger number of women than the public sector notably in Assam, West Bengal, Andhra Pradesh, Kerala, Maharashtra and Tamil Nadu at the end of March 1962. However in 1973 the position has changed. The number of women employed in private sector declined and that of public sector increased at the end of September 1973 in Andhra Pradesh, Bihar, Maharashtra and Orissa. In the states, viz, Assam, Kerala and West Bengal the share of private sector in total number of women employed was still higher than that employed in public sector. Judged in terms of share of women in total persons employed in the organised sector in each state, Kerala accounted for the highest share (33.1 per cent), followed by Assam (31.2 per cent). Orissa and Uttar Pradesh have the lowest shares (6.3 per cent each) in the total employment.

No one can deny the fact that a large number of women workers are vulnerable to various forms of exploitation, insecurity of employment, lack of standards of minimum wages, excessive hours of work, and absence of welfare amenities. The women workers in agriculture and all non-agricultural occupations lacking organisation and bargaining power, are generally the victims of these exploitation. It is believed that the protective laws have resulted in the retrenchment of women in industry : 0.4 crore in 1951 and 0.3 crore in 1971. It is observed that in spite of protective labour laws the position of women workers is grim. As many as 94 per cent of the women workers engaged in unorganised sector of the economy, 81.4 per cent in agriculture and the rest in non-agricultural occupations, are outside the pale of labour laws. The women are uniformly discriminated against in wages, and generally have to share their earnings with intermediaries. Thus it is generally believed that without strong labour organisation and a vigilant enforcement machinery, protective labour laws will remain as ineffective as the Dowry Prohibition Act. The structural changes in the economy, and the decay of traditional industries and services have resulted in massive displacement of women, particularly in the unorganised sector. Automation and modernisation of operational methods have made manual labour (women) on unskilled and semi-skilled jobs redundant. The new opportunities in the organised sector cannot automatically help the women workers' class which is being displaced, because of their illiteracy and lack of skills to adapt themselves to the changing production and marketing process.

However, the overall position of women in organised sector, both public and private, is not particularly bad. Discrimination in wages, training and promotion is on decline in this sector.

Conclusions

The following broad conclusions emerged from the study :

1. The employment of women in India in the organised sector has shown increasing trends.
2. The employment of women in both public and private sectors has shown increasing trends. But the employment of women in public sector has been increasing at a faster rate than the increase of employment of women in private sector.
3. Private sector employs a larger number of women than public sector.
4. The employment of women in the organised sector has shown increasing trends in every state of India, except Assam, Orissa and Tamil Nadu where that of women in the organised sector has shown declining trends.
5. The employment of women in public sector has shown increasing trends in every state of India.
6. The employment of women in private sector has shown increasing trends in every state of India, except Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Orissa and Tamil Nadu.

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* The trend equations are fitted through least square method ; and figures in the trend equations are in lakhs. Y=Employment of Women ; $X=1$ (for March 1962) ; $X=2$ (for March 1966) ; $X=3$ (for March 1970) and $X=4$ (for September 1973).

Relationship Between Production and Marketable Surplus of Wheat in Ferozepur District (Punjab)

B. S. Virmani and D. S. Sidhu*

Marketable surplus can be defined as 'surplus available for disposal with the producer, left after his genuine requirements of family consumption, payment of wages in kind, feed, seed and wastages have been met.'[1] It needs to be distinguished from marketed surplus which means the surplus actually marketed and may or may not denote the excess supply over domestic consumption and other needs. In the short-run, the marketed surplus can be equal to, greater or less than the marketable surplus due to forced sales, intention and capacity of the farmer to hold the produce in expectations of future prices. In the long-run, however, both will tend to equality.

The main objectives of this paper were to examine (a) the nature of relationship between production and marketable surplus of wheat crop, (b) the disparity in the distribution of marketable surplus over different sizes of holdings. The data used in this investigation were obtained from the 'Studies in Economics of Farm Management, Ferozepur District (Punjab)',[2] for the agricultural years 1968-69 and 1969-70.

Methods of Analysis

To examine the relationship between production and marketable surplus, tabular analysis was done and to find out the concentration of marketable surplus, specific concentration curves were used. The

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[1] Bansil, P. C., "Problems of Marketable Surplus", Indian Journal of Agricultural Economics. 16 (1), 1961 : 30-32.

[2] A. S. Kahlon and S. S. Miglani, "Studies in Economics of Farm Management, Ferozepur District, Punjab," 1967-68 to 1969-70 sponsored by the Directorate of Economics and Statistics, Government of India.

effect of different variables on marketable surplus was studied through regression analysis. Linear and Cobb-Douglas types of functions were fitted to the data and the following relationships were established.

$$1.\quad X_1 = a + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$$

$$2.\quad X_1 = aX_2^{b_2}X_3^{b_3}X_4^{b_4}X_5^{b_5}$$

where

X_1 = Marketable surplus of wheat in quintals. It excluded the old stocks.

X_2 = Size of operational holding in hectares.

X_3 = Area under wheat in hectares.

X_4 = Total consumption of wheat in quintals in the given year. Items of consumption included, family consumption, seed, feed, wages to hired labour, rent paid in kind and produce given as gift and charity.

X_5 = Size of family expressed as standard adult units. Persons above the age of 16 years were considered as adults. A child below the age of 16 years was considered equivalent to 0.5 adult unit.

'b_2'...'b_5' are regression coefficients corresponding to X_2, X_3, X_4, and X_5, 'a' is constant.

RESULTS AND DISCUSSIONS

Relationship Between Production and Marketable Surplus

Wheat being the main staple food of the district, the farmers put out their produce for sale after making provisions for consumption requirements and other kind payments. The results of disposals under different categories as percentage of the respective total production for Mexican and 'Desi' wheat are presented below.

Mexican Wheat

On an average 80 per cent and 79 per cent of the total productions were marketable surplus during 1968-69 and 1969-70 respectively and their proportions increased with the increase in the size of the holdings being 67.48 per cent and 58.67 per cent for very small holdings and 89.45 per cent and 87.45 per cent for the largest holdings during the given years respectively. On an average the cultivators consumed about 20 per cent of the total produce themselves and the proportion consumed decreased with the increase in size of holding, being nearly 33 per cent and 41 per cent in smallest size group (up to 6 hectares) and 11 per cent and 12 per cent in the highest size group (24 hectares and above) during the years 1968-69 and 1969-70.

'Desi' Wheat

On an average 45 per cent and 37 per cent of total production were marketable surplus during 1968-69 and 1969-70 respectively. This indicated that percentage of marketable surplus to the total production was higher in case of Mexican wheat than in case of 'Desi' wheat. The main reason behind this was that 'Desi' wheat formed the staple food in the study area. Percentage of marketable surplus to the total production increased as there was an increase in size of holding except in size group five (24 hectares and above) where marketable surplus was less than the 14-24 hectares size group.

Distribution of Marketable Surplus According to Size Group of Holdings

Specific concentration curves were constructed relating to the proportion of marketable surplus to the proportion of farm holdings in different farm size groups. For construction of specific concentration curves for Mexican and 'Desi' wheat during 1968-69 and 1969-70 the percentage of holdings in each size group was assumed to be constant for both the years on the basis of 1967-68. Percentages of holdings were 47.98, 24.07, 14.11, 9.80 and 4.04 in the five size groups respectively. It indicated that highest percentage of total holdings in district Ferozepur fell in the first size group and lowest in the highest size group. Specific concentration curves for Mexican and 'Desi' wheat are discussed below.

Mexican Wheat

Distribution of marketable surplus according to different size groups of holdings indicates that 48 per cent of holdings (falling in 1st size group) contributed 20 per cent and 18 per cent of marketable surplus during 1968-69 and 1969-70 respectively. While 4 per cent of the holdings, which fall in the size group, contributed 22 and 18 per cent of total marketable surplus in the respective years under study. And the rest 58 per cent and 64 per cent of marketable surplus were contributed by 48 per cent of medium sized farmers (between 6 and 24 hectares). Specific concentration curve indicate that there was a disparity in the distribution of marketable surplus during 1968-69 and 1969-70. But these curves do not show any considerable difference in the distribution of marketable surplus over the different farm holdings between the years 1968-79 and 1969-70.

Desi Wheat

There was less disparity in the distribution of marketable surplus of 'Desi' wheat over different size groups of holdings as compared to Mexican wheat. In this case 48 per cent of the holdings falling in first size group contributed 22 and 34 per cent of total marketable surplus during 1968-69 and 1969-70. Four per cent of the holdings falling in highest size group (24 hectares and above) contributed 16 and 10 per cent of the total marketable surplus during the years under study. Rest 62 and 56 per cent of the marketable surplus were contributed by the medium-sized farmers (between 6 and 24 hectares). Specific concentration curves shows that there was a decrease in disparity of marketable surplus during 1969-70 over 1968-69.

Regression Results

It was found that area under wheat and total consumption of wheat were the main factors explaining about 69 to 97 per cent of total variation in the marketable surplus of Mexican wheat and about 53 to 87 per cent of total variation in marketable surplus of 'Desi' wheat in different size groups.

On the whole the aggregate analysis of crops has shown that in case of Mexican wheat, size of farm, area under wheat and total consumption explained nearly 83 and 84 per cent of variation in marketable surplus during 1968-69 and 1969-70 respectively. Size of farm, area under wheat and total consumption were significant at one per cent level during both the years. On the other hand, in case of 'Desi' wheat, size of farm, area under wheat and total consumption explained about 46 per cent of total variation in marketable surplus during 1968-69, while area under wheat and total consumption explained nearly 76 per cent of total variation in marketable surplus during 1969-70. During 1968-69, in case of 'Desi' wheat, size of the farm and area under wheat, were significant at one per cent level and total consumption was significant at 10 per cent level, while in 1969-70, area under wheat and total consumption were significant at one per cent level.

The elasticity of marketable surplus with respect to size of farm and area under wheat was positive in all the cases, while those with respect to total consumption and size of the family was negative. The coefficients of elasticity of marketable surplus with respect to area under wheat and total consumption of wheat varied between 0.7724 and 1.9744 and −0.2135 to −2.1652 in Mexican wheat. In case of 'Desi' wheat, the coefficients of elasticity of marketable surplus with respect to area under wheat varied between 1.5069 and 2.6540 and with respect to total consumption between −0.2657 and −2.0350. The comparison of coefficients of elasticity of marketable surplus with respect to various explanatory variables over different size groups in case of Mexican wheat indicated that out of total 37 comparisons made only in 16 cases the coefficients were significantly different. Similarly, in case of 'Desi' wheat, out of 31 comparisons only in 15 cases the coefficients were significantly different.

Comparison of coefficients of elasticity of marketable surplus with respect to various explanatory variables within the different size groups in case of Mexican wheat indicated that out of 24 comparisons made, in 18 cases the coefficients were significantly different. Same was the case in 'Desi' wheat where out of eight comparisons, coefficients were significantly different in seven cases. This indicated that the effect of different factors on marketable surplus was significantly different from one another within different size groups.

On the average during 1968-69 in case of Mexican wheat, the coefficients of elasticity of marketable surplus with respect to the size of the farm, area under wheat and total consumption were 0.3331, 1.2683 and −0.2135 respectively, whereas in case of 'Desi' wheat the respective figures for elasticity with respect to the size of farm, area under wheat and total consumption were 0.4748, 0.4521 and −0.2657.

During 1969-70, in case of Mexican wheat, the coefficients of elasticity of marketable surplus with respect to the size of the farm, are under wheat and total consumption were 0.3603, 1.0849 and −2.1652 respectively. And in case of 'Desi' wheat the coefficients of elasticity of marketable surplus with respect to area under wheat and total consumption were 2.6540 and −0.7680.

The coefficients of elasticity of marketable surplus with respect to size of farm, area under wheat and total consumption were significant at one per cent level during both the years for 'Desi' and Mexican wheat,

Economics As it is To-day

K. N. Prasad*

Philosophy searches eternal truth *a priori* (purposely). It encourages us to sort out moral questions from empirical. Ethics evaluates and prescribes, Art is a collection of precepts. Its language is in the imperative mood. Science is a system of truth. It is a body of theorems based on assumptions that are empirically derived and which embody hypotheses that are capable of verification in regard to those assumptions and the predictions, as Kaldor puts it. It consists of structures of concepts. Its language is in the indicative mood. Facts are the *relata* of science. The task of science is to analyse and explain causal relations between facts and events. Generality is the hall-mark of a true science. In other words, there is no science without generalisations. Science seeks to classify the nature and causes of phenomena. It observes and describes empirical reality. Its aim is to find in the sensations produced by concrete reality the revelation of an abstract system. But a science is explanatory rather than descriptive. Abstraction is the basis of science. A perfect science is deductive. Its object is to produce accurate and interesting predictions. It seeks to forecast future events. Science attains only very high probability. It cannot attain certainty.

A pure science is devoid of all reality content. It is concerned with the shaking-out of the implications of premises. Its goal is to develop a theory or a hypothesis that yields valid and meaningful predictions about phenomena (not yet observed). Its function is to deduce definite conclusions from definite premises. It sacrifices realism and applicability to gain prescriptive generalisations. On the other hand, in a realistic science facts are not simply brought together but are compelled by thought to speak. A natural science studies behaviour. It appeals to empirical data given through the senses while verifying its theories. A social science by comparison uses empirical data given introspectively while verifying its theories. Since it appeals to introspection it cannot get any criterion for public validity. It runs the risk of an ideological predicament. It may become value-laden. But a social science and a natural science are similar in certain respects. Both formulate hypotheses. Both deduce testable consequences. Both eliminate hypotheses whose consequences do not withstand testing. Both arrive at empirical laws about the connections of phenomena. Both believe in this unity of method.

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The function of theory (analysis) is to furnish a context in which facts can be systematically organised. Theory is a compound of two elements : I. A language for promoting systematic methods of resoning. In this sense theory is a set of tautologies. It is a filing system. 2. Substantive hypotheses for deriving the essential features of concrete reality. In this it is judged by its predictive power. It is the way we perceive facts and we cannot perceive facts without the aid of theory. But a completely realistic theory, according to Friedman, is partly a straw-man. Truth or falsehood of a theory is not relevant. What is relevant is the consistency of its logic. Any theory is necessarily provisional. It is subject to change with the advance of knowledge. Theory is a heuristic device, that is, the art of discovery in logic or the method in education by which a student is set to find out things for himself. A theory is scientific if it is falsifiable. It is complete only when its probability has been tested. The superiority of a theory is measured solely by its explanatory power. A theory is tested by comparing the predicted effects with the actual effects.

Economic theory is an edification of reality in its specific forms, not all forms. After all, reality is a continuum of cases from certainty to increasing degrees of uncertainty. Economic theory is concerned with deductive inquiries. In such inquiries the reality principle is not always present. The premises of economic theory can be completely *a priori*. But economic theory may not absolutely be lacking in empirical content. However, its applicability to a complicated situation is often slight. It may be drastically simplified by the copious use of qualifying conditions.

Pure (and formal) economics is a kind of astronomy of the economic universe. It discusses the mutual determination of the positions and magnitudes of various economic variables or quantities. Both pure economics and astronomy proceed by observation rather than by controlled experiment. Both lean on the concept of general equilibrium through the solution of simultaneous equations. Pure economics appeals to general uniformities rather than to particular instances. It addresses itself to the form of conduct rather than its substance or content. Economic laws are explanatory, not admonitory. The economist's object is to understand events with reference to general principles.

Friedman's thesis is that positive economics is independent of normative or value judgements or any particular ethical position and hence the validity of economic theory is to be tested by the accuracy of its predictions, and not by the descriptive reality of its premises. Such formalist trend has been influenced by the neo-Kantist philosophy developed by Rickert and Weber. This trends regards formalism as a form of idealism. Idealism is positivistic. It is another realism. Reality is a construct of the mind. Reality is another realism. The world is a creative act of thought. The function of social science is to provide concepts which allow us to arrange empirical realism in a valid manner. The natural datum of positive (formalist) economics is choice or conflict of choice.

Positive generalisations in economics have their limitations. Firstly, there cannot be many generalisations of high probability in economics because economics has to handle a complex, impulsive and unstable subject-matter. Secondly, pure reasoning cannot disinter the economic motives of man. Thirdly, familiarity with the subject-matter breeds contempt for special knowledge about it. It impedes objectivity. It promotes confusion between positive analysis and normative judgement. Fourthly, control of the unruly variables is impossible. This necessitates reliance to be placed on controlled experiment. Testing of hypotheses is thus rendered obtrusively difficult. This too entails confusion. Fifthly, there is the further difficulty of separating the more pertinent forces from the less through the process of observation or introspection.

The evil effects of the exclusive concern of positive economics with the implicatory phases of investigation have been the neglect of formulation of problems as well as the neglect of discovery of those data whose implications can be tested scientifically. Another evil effect is that wide generalisations are illegitimately held to be superior in all cases to partial empirical findings. The next evil effect has been that the theorist tends to seek solace in the phantom of certainties of formal logic or mathematics. This, of course, gains in generality but loses in applicability. More and more artificial hypotheses have to be introduced. But these by themselves cannot curve the infirmities of economic science. As a result, pure economics becomes an amusing toy, and one is reminded of Marshall's word of caution that "general theories may help one to get into the saddle but they may prove to be encumbrances on a long journey." Another danger of merely positive study in economics is that social problems will be treated by damagogues and fanatics with no interest in logical reasoning and no knowledge of economic techniques. So there is a reaction from the above trend. It has been increasingly realised in modern times that economic theory must be built upon an adequate empirical base and should be brought more intimately in touch with actual conditions and problems.

Even the most theoretical economists (like Walras and Pareto) have not resisted the temptation of tendering advice on the basis of pure theory of causal sequences and a certain knowledge about the world derived from a simultaneous conspectus of the realm as a whole. Economic theory is of general validity since it embodies rigorous formal deductions from premises founded on common experience which is clearly discernible. By contrast, economic policy amounts to the demonstration of the implications of certain value judgements, that is, the formulation of criteria of judging what is desirable or undesirable in economic affairs. These criteria are taken over from other social sciences such as philosophy or are given by some political authority and are therefore fiduciary in nature.

In Schumpeter's opinion the two roots of economic science are : One, philosophy, which avers that social activities constitute the fundamental problems of the day, which can be substantiated by quoting Caralyle, "Wonder is the beginning of philosophy. Social enthusiasm is the beginning of economic science." On this view, scientific economics was forged in the fire of ideological detates. Or, as Boulding remarks, economics has developed, by and large, as a by-product of propaganda for policies of various kinds. It is the promise of fruit, says Pigou, and not that of light that chiefly merits our regard. Economics is to be guided by practical instinct. In the words of Comte, "It is for the heart to suggest our problems ; it is for the intellect to solve them...The only position for which the intellect is primarily adapted is to be the servant of the social sympathies." "In our most theoretical moods", notes Whitehead, "we may nearest to our most practical applications."

Welfare, i.e., economics of economic policy, has three dimensions, viz., prices, quantities and maximisation of welfare. It is different from pure (price) economics, which has got only two dimensions, namely, prices and quantities. It is also different from ethics which has four dimensions : prices, quantities, maximisation of welfare, and maximisation of welfare in a given sense. Welfare economics is like astrology. Both study the effects of changes in given magnitudes. Both relate a welfare function to human welfare. Both adjudge positions of given bodies. But astrology has been more successful than welfare economics for the reason that it has better personal and statistical evidence. In the old, classical welfare economics the flourishes of the abstract theory were kept in check by a desire to preach or advocate social amelioration. All classical analysis is teleological or purposive. It runs in terms of purpose. The classicals have definite proposals for what they deem to be social improvement. They offer a body of precepts for action, 'an agenda of the state.' One can easily detect in their writings a persuasive moral tone. They accepted as their business the suggestion of a code of economic policy and sought in the utility theory a sure basis for the prescriptions of economic policy. They were keenly interested in value as well as in riches. Value was considered a problem of economic magnitudes, whilst riches that of economic welfare. The classical held their policy recommendations to be scientific results that followed directly from scientific analysis, though not from purely economic analysis. To recollect, classical economics began as an attempt to classify and to resolve the contemporary issues of political dispute. It was *meta-political.* It tried to set up standards of judgement on economic desirability, such as to define riches, to expound a notion of economic optimum, and to offer guidance to social policy. It laid down maxims of economic policy. It indicated which policies were likely to be conducive to social welfare and which ones were likely to lead to waste and impoverishment. Pigou as an exponent of this thought rejected the idea of economics being a normative science. According to him, economics forms the basis of an art ; it is not an art in itself. It does not directly enunciate the precepts of government policy. But as a realistic positive science it is guided by practical instinct. Its declared purpose is to make easy practical measures to promote welfare. Despite this the Pigovian welfare economics is essentially normative insofar as his investigation of the causes of welfare, in fact, prescribes economic policy by implication. The recommendatory force of his welfare postulates is very strong. His welfare system wants a truly objective basis. It rests on assumption and criteria of subjective nature and of dubious value.

By difference, the new (modern) welfare economics develops proposition which are scientifically free from value or ethical judgements. Value judgements (statements) are evaluative and/or prescriptive (persuasive or emotive). They assert the moral worthiness of certain things. They cannot by their very nature be true or false. They cannot be proved or disproved. They can appeal to us because they agree with our ethical approach. On the other hand, factual (scientific) judgements (statements) are descriptive. They describe facts as they are. Hence, they are either true or false. They can be verified or refuted under ideal conditions. A second feature of the new welfare economics is that it supplies criteria of general or even universal validity on the ground of which one can decide whether a course of action is desirable or otherwise from the economist's point of view. Thirdly, it eschews direct prescriptions. It provides guidelines for policy as are commensurate with the general standards of objectivity. Fourthly, it is value-free. As such, it is a part of the general body of economic theory concerned chiefly with policy. It is a science which finds out which is the best thing to do in various situations. In it the economist is stated to be perfectly objective and scientific, assuming that he advocates a change in economic institutions or regulations, a change which is bound to yield increased efficiency.

An attempt at reconciliation between the old and the new welfare economic would boiled down to this that policy recommendations in economics may have either positive or normative bias but in making recommendations they must be distinguished. Besides, welfare economics, whether old and new, is teleological. The teleological trend in economics combines rigorous analysis with teleological assumptions. It deals with particular ends or purposes. e.g., avoidance of fluctuations, full employment and greater economic quality. It claims to make available a much surer guide to policy without impairing the positivist character of economic generalisations. It diagnoses economic ills and suggests remedies thereof. Even when abstract, it reveals a tendency to be of use in the worldly affairs. It is eclectic, having blended theoretical analysis with practical bias. It pleads strongly for greatar realism in economics. It attacks abstract speculation. It cherishes certain reform ideas. It considers normative implications to be inescapable and wants them to be faced squarly.

The teleological trend has stimulated the present prescriptive approach. The latter starts from general premises based on widely recognised value judgements. It integreates a method of approach or an apparatus of analysis of economic problems with a system of explicit or implicit prescriptions intended to guide policy decisions in general situations. It is different from the ad hoc or the economic approach. The latter applies to a specific situation.

The economic adviser has to be a good economic theorist. He has to possess the necessary technical equipment for knowing the possible interrelations of economic forces. He has to know how and in what directions a given policy will produce its potential effects so that he can take a decision on it. He should be able to see the way in which the determinants are likely to work themselves out and the range of phenomena which they are likely to effect. Economic issues require the specification of the direction of the net outcome of the influences operating contrariwise, that is, the influence of one variable on another which calls for a specification of two things—the magnitudes and the signs of those influences. This is why it has been aptly remarked that for serving as a guide to policy economics needs "the lamp of assured knowledge and the sharp sword of right analysis."

Economic theory will supply the adviser with the tools of analysis, will teach him how to use logic within the ambit or framework of known data, how to arrange facts in the order of their magnitudes or in the order of their place in time, will also provide him with an insight into the variable on which a given determinant operates, and will finally specify some measurable quantity on which the upshot of a problem turns. The key-note of the works of the leading English neo-classicals like Sidgwick, Marshall and Pigou is commen sense pragmatism, their object being to build up a workable economic theory designed for practical use and not for formal elegance and logical stringency.

Nonetheless, the role of economic theory in the solution of practical problems is extremely limited. In the first instance, it is not self-sufficient. It has got to be supplemented by judgement and intuition for isolating and identifying the more significant aspects of a problem because the available empirical facts are generally very imprecise. Quantitative comparisons of alternative situations are not always practicable. So an amalgam of logic and intuition is essential for economic interpretation in its highest form, as Keynes noted. No practical issue can be settled wholly on the basis of economic theory and ultimately we must consult our ethical instincts and common sense to decide how far we could be scientists and how far we would be reformers, so said Marshall. On the second count, economic theory cannot by itself supply a detailed specification of the environment to which it is to be applied. On the third score, beyond a certain point economic theory may well become a handicap rather than a help as the desire to reach clear-cut answers may tempt the economist to simplify his analysis to such an extent that his conclusions cannot be applied conveniently to practical problems. The other odd against economic theory is, as Robbins pointed out, that in natural sciences the transition from the qualitative to the quantitative is easy and inevitable but in social sciences it is either impossible or replete with peril and difficulty. Robbins further pointed out that the economic theorist was confronted with the lack of constants in the economic system and had, in consequence, to rediscover various laws of gravita- from movement to movement.

To conclude, the present era is one of social technology or social engineering. The task of a social engineer is to design social institutions and to reconstruct and run those already in existence, There are two types of social engineering: One, piecemeal, when small adjustments and readjustments in the existing institutions are desired, and two, utopian, when remodelling of the whole society is imperative. The economist is a social scientist. He is best qualified among the social scientists to make judgements and recommendations on the question of distribution of welfare in a community. But while taking upon himself the task, he must make it quite clear and explicit on what basis he has arrived at those recommendations. If his recommendations are to command general assent or approbation, then the judgement on a given norm must conform to the judgement of the public. He may not be in a position to go against public opinion but he must lead rather than interpret it. There may exist wide areas of choice where the majority of people are unable to make a judgement because they are ill-equipped for it. One example is where the preferences of the community are inconsistent and contradictory. All the same, he must assume full responsibility for the advice tendered by himself.

Reverting to the role of economic theory in the making of economic policy, we can add that when a person bereft of knowledge of economic theory takes upon himself the task of economic policy making, the latent danger is that the policy-maker who is deficient in theoretical knowledge will not reason in a sound manner and hence the inferences drawn by him cannot be right or will be right only by accident. He will fail to reveal the less obvious features hidden from a careless eye in the existing situation, as an economist well adept in theory can. The economist has a part to play in the formulation of economic policy for we have to face the fact that economic propositions, however carefully they may have been distilled according to the canons of logical purity, will have to be transmitted to economic policy and in the practical execution of policy somebody must face the final necessity of making ethical judgements, thus observes Myint. He goes on : We might palm that responsibility on to the hypothetical economic planner or the statesman ('the practical man'). But so long as economic policy cannot be made full-proof like a motor-car which can be run without any profound knowledge of motor mechanic, that statesman or practical man must, to some degree, be either an economist or advised by economists.

Futurism in economics has its severe limits. Economic prognostication is extremely difficult. The changes in data are not accurately predictable. The multi-form reality cannot be reproduced *in toto* in the economist's model, however comprehensive or pervasive it is. The economist is unable either to obtain facts with which to test his theories or to put his results in a form in which they can be tested empirically or, in the alternative he claims too much in spite of the awareness of the limits of his science. Perhaps the best course left to him lies in his being short on forecasting but long on assuming. He may as well contend, on the authority of von Karman, that prophecy is not a scientific activity and therefore not the task of science.

Lastly, a word about the distinction between models and theories. A model is a way of setting forth hypotheses regarding a particular problem. It is a system of simultaneous or structural equations expressing all the reciprocal relationships which connect measurable economic quantities (and thereby govern the economic process). It is the theorist's edification or simplification of a given theory. It is a construction in which certain elements of the state or process that we desire to examine are selected such that the inter-relations and interactions of these elements may be decided by reasoning, with a view to enhancing our understanding of that state or process. A model seeks to reproduce some of the relations between familiar elements. It is not a compehensive reproduction of all the relations (i.e., of the social whole). It provides a simplified and idealised image of certain aspects of human activity. Its construction is the product of basically speculative research.

Models are different from theories in the following respect : They deliberately treat of only a few selected relationships. They purport to be closed systems. The conclusions follow, of necessity, from the axioms. The relationships are quantifiable. In a nutshell, a model represents the translation or rendering of theory into the form required for its numerical verification.

Models* are an essential aid to clear thinking. They make explicit and rigorous what might otherwise remain implicit and vague and self-contradictory. They are antidotes to excessive rigidity of thought and exercises in searching for interdependent relationships. They act as thought-therapy and as guides to the framing of relevant questions. They may not possess high predictive powers but they will afford an inkling into the working of the system. To be useful models must employ concepts that are clear and meaningful and have an empirical counterpart. The essential assumptions must be elucidated. Models must be refutable by empirical evidence. They must lay down sufficiency conditions. They must pose a set of questions pertaining to the observable data. They must contain estimates of territorial and extra-territorial factors. The last two requirements make models approximate theories. For being useful models should focus analysis on relationships that are important for comprehending reality and strategic for purposes of policy. Models are to be judged by their relevance to the problems under investigation, their logical consistency, their adequacy to reality, including their correspondence to patent, transparent facts.*

* The models of operations analysis are oversimplified pictures of the real world. The model-builder must be alive to the fact that what is left out is often as important as what is put in. There is no magic in mathematics.

DISTRIBUTION OF ELECTRICITY (1971 Data)

	Rural areas		Rural areas	
	Productive demands Percentage of total	Household Percentage of total	Productive Percentage of total	Household Percentage of total
Chile	67	33	n.a.	n.a.
China, Republic of	26	74	80	20
Costa Rica	70	30	43	57
El Salvador	45	55	60	40
Ethoipia	55	45	44	56
India	80	20	89	11
Nicaragua	60	40	30	70
Pakistan	40	60	90	10
Tanzania	75	25	80	20

Monetary Policy in India : The Role of R. B. I.—II

Vasant Desai*

After some relaxation of selective credit measures, monetary regulations were introduced in 1963, and thereafter bank rate was put to 4½ per cent in January 1963, to 5 per cent in September, 1964 and to 6 per cent in February, 1965, thus reaching an all-time high level. In September, 1964, net liquidity ratio was fixed at 28 per cent and for every drop in the ratio the cost of borrowing from the Reserve Bank would go up by ½ per cent. The maximum rate on advances was fixed at 9 per cent in September, 1964, and was raised to 10 per cent in February, 1965. The minimum net liquidity ratio was raised to 30 per cent.

In view of the inflationary impact and deteriorating foreign exchange position, there was a decline in growth rate and the Plan ended with a note of frustration. From the last year of the Third Plan, the economy was in the grip of inflationary recession.

Three Annual Plans were introduced from 1966 to 1969 and thus the commencement of the Fourth Plan was delayed. The rate of economic growth could not be maintained and some pockets of the economy experienced recessionary trends. But prices went on increasing. In order to counteract the trends of inflationary recession, bank rate was reduced to 5 per cent in early 1968. Banks were asked to reduce the maximum rate for advances by ½ per cent. In 1968-69, the economy was looking up with favourable agricultural season and that was considered to be the right time for the Fourth Plan.

The emphasis of policy during the Fourth Plan was aimed at fuller utilisation of production-capacities and with preference to priority sectors of the company. In spite of the policy measures, national income did not increase as estimated at 5.5 per cent per annum. Dear money policy was adopted and interest rates were raised. Bank

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rate was at its peak level at 9%, And other statutory measures had been made more stringent.

The Reserve Bank of India has issued guidelines and directives from time to time to ensure that the available lendable resources deployed in such a way that the following objectives are sustained :

(a) that the needs of exports, public food procurement operations and other priority sectors such as agriculture, small-scale industry and other small borrowers are met to an increasing extent ;

(b) that all the selective credit controls on sensitive commodites are fully implemented and as a general policy, advances to traders which could possibly be misused for speculative and hoarding purposes are discouraged ;

(c) the needs of essential production and movement of goods are facilitated and that credit is provided where it is justified ; and

(d) that bigger credit limits (above Rs. 1 crore) are authorised after a detailed scrutiny both by the bank itself and then by the Reserve Bank.

Interest Rate Policy

It is possible to emphasise the role of interest rate policy in regulating saving and investment. Since saving should keep with the rate of economic growth, the response of deposits to the rise in the rates of interest deserves careful consideration if banks are to mobilise more deposits. A system of differential rates will have to be tried to increase saving habit and to induce to bring the surplus to banks.

Banks operate on the difference between rates of interest offered and received. The structure of interest rates connot be considered in isolation of the cost to banks. The pattern of interest rates move in accordance with the centres of finance, trade and industry. Interest rates in surplus area move down and that in deficit areas move up. There is a transfer of locational zones of deposits as time goes on.

An appropriate interest rates policy can raise the ratio of deposits to national income and the ratio of savings to national income. To the extent the national financial integration is deemed as an important objective, it is possible to use interest rates policy to reduce the gap in the location pattern of savings and credit.

The rise in rates of interest will increase deposits as a result of incentives on savings, if prices remain stable. But interest rates offered in real terms will determine the size of savings in a period of rising prices. The gap between real and money rates will have to be reduced reasonably if the rates structure is to be stabilised.

If the pace of development is to be accelerated, the pattern of interest rates will have to be slanted in a more positive direction than are artificially made to conform lower rates. The pattern and direction of development will depend upon the relative roles of banks as mobilisers of funds and as allocators of loanable funds. An articulated but positive interest rates policy will serve as a potent weapon in a growing economy to contain inflationary potential.

The effectiveness of a flexible interest rates policy in influencing liquidity and expectation is limited in an underdeveloped economy. But all the same the monetary authorities must have a positive policy on interest rates. It is one of operating a structure of interest rates which takes into account diversified conditions and needs of the economy. We have the problem of diversity and multiplicity of interest rates.

Monetary Policy and Prices

Relative price stability is one of the objectives of monetary policy. If economic development with stability is the accepted goal, inflationary price spurt should be reduced or stopped. In the absence of monetary stability, prices rise faster than money wages as is the experience in India. In a developing economy the quantum of wage goods exercises the effective influence on the price level. The scarcities of wage goods inflate their prices. The process cannot proceed for long.

During 1951-69, prices have recorded a significant rise of about 74 per cent. One of the features of the rise in prices is the absence of seasonal fluctuations. Prices have risen even in off seasons and in spite of higher levels of production. There is the need to correct the persisting and pronounced distortions in the economy arising out of secular trend of rising prices. It is worthwhile to examine whether so arising prices are more due to 'cost push' or 'demand-pull' inflation.

Monetary policy is one of the measures to stabilise prices. It is unfortunate that the monetary authorities have not been able to arrest the rising trend of prices in India. In a period of rising prices. the focus should be on the broad shifts in relative prices which are relevant for achieving certain desired ends in the distribution of money and real incomes. An appropriate income and price policy has to be integrated with monetary policy. Monetary-fiscal policy has to be price conscious and production oriented with the aim of holding the price line.

As a result of the effective implementation of the varied measures of the monetary policy, price continued to decline towards the beginning of 1975. It may be assumed that the inflationary situation has started its downward journey.

Seasonal Impact

One of the features of our monetary policy is its seasonality. During the busy season, there is an expansion of money supply and in the slack season, there is a contraction. This is because of the nature of the collateral security and processes of marketing.

A recent study has emphasised the pronounced seasonality in demand for and supply of money for transaction purpose. The demand for money follows the course of agricultural season. The busy season extends over the post-harvest trading period and is roughly co-terminus with the half-year commencing with the end of October. Even the payments on the Government account are to be effected before the end of March every year. The secondary activities dependent on agriculture also follow seasonal pattern. It is also stated that seasonality is closely associated with short-term price stability objective.

As the process of development gathers momentum, the impact of seasonality is bound the reduce. It is necessary to adjust seasonal changes to depict clearly to long-term trends in the economy. In this way it is possible to appreciate the basic factors responsible for changes in money supply and monetary resources.

Lessons for 1980's

Our monetary policy in retrospect for 1950's, 1960's, 1970's has been one of cautious improvisation. It is obvious that the monetary policy during the last two and half decades had failed to reduce or regulate the price spurts. However, the dear money policy implemented during the mid July 1974, at the peak level of inflation has been continued during 1975 also. The net impact of this policy has checked the inflation and set the pace for an accelerated economic development.

In a developing economy like that of India, monetary policy has to maintain a balance on a tight rope. On the one hand the sagging economic growth has to be activated while on the other growing inflationary pressures will have to be kept under control. It is quite easy to preach than practice the objective of monetary policy, namely promoting economic growth by maintaining price stability.

Even in 1980's the basic monetary problem is likely to be the same. Political expediency and social policies would require monetary action to be restrictive as well as positive helping economic growth, increasing production and improving productivity. The success of policy in such context will depend on the courage of the monetary authorities to contain pressures that inflate prices. In order to maintain monetary stability, there should be greater co-ordination between productive priorities and allocation of scarce resources.

The main task of the monetary authorities will be to convince the political leadership about economic realities and cost involved in the process of economic development. But the choice of alternative policies will depend upon economic environment, administrative ability and political leadership. The monetary policy should be sufficiently articulated, properly co-ordinated and accurately implemented.

In 1980's credit planning at macro and micro levels will assume greater importance than hitherto. In this direction the macro aspect has to take into account the over-all volume of credit expansion to meet the requirements of the economy in the context of certain broad considerations. Credit planning as an integral part of over-all economic planning covers the processes of formulation and implementation of credit policy in aggregate sense and in relation to various sectors of the economy. Credit planning involves the task of identifying credit gaps and keeping constant and continuous watch over the performance of the credit system. In a sense credit planning started with social control of banks. But it is required to be followed up in the development process. Material and financial balances built into the Plan require that total expansion of monetary resources should be related to increase in the national income and that all the productive sectors of the economy should get the necessary credit. At micro level, credit planning requires continous adjustment to see that neither an excess nor a deficit of credit supply takes place and the credit is allotted after taking into consideration the changing economic situation, production targets and availability of finance from other sources. In this fashion, credit planning has to reconcile the supply of credit to each firm, industry and sector with the overall expansion needed to the balances of the Plan. Bank finance needs to be under the continuous scrutinity of the bankers and it is to be given only for productive use.

The National Credit Council in its Report on Organisational Framework For the Implementation of Social Objectives, studied this problem and emphasised that there is the need for effective mobilisation of resources in future policy and operations. The *N.C.C., in fact*, recommended an area approach to evolve plans for development of banking and credit structure. District was the lowest unit of an area-approach. In formulating and implementation of development plans of credit and banking in each district, it is considered necessary to take into account the establishment of new branches or units, relationship within a structure or as between structures and the formulation of proper policies and procedures. It is possible on this basis to lay down a long-term policy and thus create an apparatus to evolve a programme of action consisting of policy measures.

It is true that the distribution of institutional credit is uneven in terms of allocation to different sectors and certain types of borrowers do not have a fair share. Uneven distribution of credit facilities in different areas is as much pronounced as concentration of banking in major urban areas. Unless we overcome these gaps and weaknesses in credit structure, there is no hope for optimum achievement of the desired goals of monetary policy. Some of these weaknesses are due to mistakes in the monetary policy of the authorities. These mistakes, in turn, have inherited from socially inappropriate pattern of investment in plans and inflation and inflation-oriented fiscal-monetary strategies.

The relationship between the Government and the Reserve Bank will assume greater significance in 1980's. Government on its part should regulate and stabilise its spending to maintain balance in the economy. In the ultimate analysis, the operation of monetary policy will depend upon the intentions of the authorities and the degree of response and co-operation they expect from others. Economic development being a joint venture, requires the support from all institutions. Each agency must play its part positively to make the programme a success.

In this context, new weapons may have to be devised to regulate the activities of financial intermediaries. Apart from the choice of policy instruments, the basic problem will have to be tackled through simultaneous adoption and adaptation of the monetary and fiscal policies with other instruments of econmic policy. In this sense, the fiscal policy should be based on sound diagnosis. Monetary fiscal policy mix should embrace the measures affecting the rates of interest intended to bring about tight monetary policy. The changes in interest rates should be buttressed by other measures of financial control.

In 1980's the monetary situation will be quite different than that in 1960's or 1970's. Organisationally, credit institutions will be penetrating into rural areas and the unorganised market will have to be within the orbit of organised sectors. In many states rural banks will establish a strong link between the co-opratives and the commercial banking system. The expansion of credit in the priority sector might call for implementation of new strategy. Again, new financial institutions vis-a-vis Export Import Bank, National Banks, Industrial Finance Banks established during the second half of 1970's may have to be followed by disciplines credit during the 1980's, Developing economies will have to employ package programes to overcome the limitation of monetary weapons. The monetary authorities will have to think of flexible strategy of plans and monetary discipline in toning up quality and character of plans in practice. In fact, the policy is to be selective and qualitative.

In carrying out the tasks of development, management of monetary institutions will assume importance to keep up the spirit and sense of effective participation. For the success of monetary management there will have to be a complete understanding between those who frame the policy and those who are entrusted with the task of executing it. In this sense, the managment problems of the monetary affairs will be more challenging in 1980's. The monetary policy in 1980's will not only consolidate the economic situation and set banking system on a sound basis. The present situation holds good promise for the 1980's.

Credit planning can also be regarded as an important aspect of developmental planning in view of the potential of credit as a weapon of development. For the successful execution of Five-year Plans, or other development plans, it is absolutely essential to extend increasing credit facilities to specified lines of high priority. In view of the potential of credit as an effective instrument of growth, it is necessary to see that the banks extend credit in a manner conforming to the scheme of development visualised by the economic planners or the planning machinery.

Credit budget is indeed a means to achieve the organisational goals of the banks as well as the social objectives of nationalisation. As banks have got to strike a golden mean between profitability and social objectives in the changed context of nationalisation of banks, credit planning, deposit planning and profit planning have now acquired special significance.

In short, there is a need for effective credit control by the Reserve Bank of India. And the Reserve Bank of India has to be a pace-setters for all the financial institutions in formulating credit plans. In fact, all financial institutions should adopt credit planning at micro levels, and introduce Performance Budgeting at branch levels. Planned development of banking industry and effective implementation of the monetary policy in 1980's follow credit planning at macro and micro levels. This will acclerate the economic development.

(Concluded)

Regional Rural Banks

Subhasish Gupta*

Anyone acquainted with what is on in our rural economy should at least be encouraged to learn about the Chief Ministers' approval of Regional Rural Banks, which are said "to meet the special needs of the hitherto neglected sections of the rural areas". Indeed, the necessity of such a type of institution has been felt for long in order to protect the agricultural sector which, after having a few bright achievements have become more or less stagnant for a long time. Due to the predominance of the landowners over the landless, relations between the owners of the farms and the actual cultivators were taking such a shape that it seemed to declare a permanent divorce of the rural sector from any possibility of future development. Though the Zamindari System has been abolished by law, the remnants of a centuries-old system could not have been altogether wiped out from the rural scene. And there have developed a class of neo-zamindars who have come to stand as the principal bottleneck to any institutional breakthrough in our agrarian infrastructure. They have come to acquire the entire controlling authority over both the "capital market" and the "commodity market" in the rural sector. And by manipulating these two vital economic powers they have successfully prevented any growth of a perfectly competitive market in the commodity sector and any growth of free labour in the factor market, both of which are pivotal for any rapid advancement. So the principal objective of the new rural banks seems to be to liquidate this controlling authority of the rural rich at least from the rural capital market.

It is said that the new rural banks would be completely different from the banks with which we are already familier. First, they will not work on the principles of commercial banking, and second, they will have the absolutely novel feature of providing consumption loans which have become a regular necessity of the poor peasant families. In general, therefore, the regional rural banks may be expected to trigger the rural economy into a new direction.

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The age-old phrases, semi- feudalism and pre-capitalism, continue to define the land relations present in different parts of Bengal ever since the Mughal period. This has been possible for the continuous decay of the rural handicrafts and the ever-growing population, generating a tremendously increasing pressure on land ; the result of which is to constantly maintain a pool of illiterate and landless mass at the command of the richer peasants. This has led to the widespread system of share-cropping in Bengal's villages. The unfortunate destitutes submit their labour to the landowners and the latter lease out their land to them to carry out the actual cultivation for at least one production cycle. After the harvest the produce, net of production costs which are usually provided by the landowner, is shared between the landowner and the actual cultivator. Now, while the legal share of the cultivator is about 40 per cent of the net harvest, since the peasants are generally traditionally indebted to their landlords, a substantial portion of their legal share is automatically taken away immediately after the harvest as repayment of past debt with interest. It has been found that in many cases more than half of the legal share had to be tendered as repayment of previous loans. Moreover, it is not quite infrequent that the landless peasants are so heavily indebted to their landlords that even the full share of a harvest is absolutely inadequate to meet up all their debts. Thus indebtedness accumulates over time making interest liability extremely heavy.

The residual produce remaining at the hands of the cultivators after repayment of the debt is never enough for them to survive till the next harvest. Hence a further loan for consumption becomes absolutely unavoidable. And the single most dangerous feature in this sphere is that the same person plays the dual role of landowner and money-lender. Thus while the peasant becomes more and more tied to his landowing money-lender in connection with his ever-increasing debt, he has the only avenue of employment with his money-lending landowner as a share-cropper in his farm. In this way the process of tying labour to land continues to prevail though in legal terms they are free.

This phenomenon of economic relationship between the landless peasants and the landowing money-lenders (locally known as jotedars) works with full severity due to the inadequacy of proper banking facility in the rural areas. Even in cases where some banking facilities are available, they are of use only to the landowners due to the fact that landless peasants are not usually credit-worthy in any commercial banking sense as they have no assets to borrow against. Moreover, consumption loans fall entirely outside the jurisdiction of any normal banking system. Credit availabilities from other sources are also negligible, as the rural credit survey has revealed that governmental agencies and cooperatives have provided only 3.3 per cent and 3.1 per cent respectively of the total borrowings by cultivators. A major part of this is again attributable to some select districts like Punjab, Haryana, and some other western parts of U.P. Thus the landless peasants' only lenders here are their landlords who lend against the future harvest and the peasants have to borrow on terms dictated by the lenders. That is, the peasants have no necessary nexus with the rural capital market. This is coupled with the inaccessibility to the commodity market also. Price fluctuations in the commodity market, the advantages of which are often available to the free traders, act rather in an adverse direction for the tied peasants. Having run out of his share of crop which he had from the last harvest, the peasants usually have to borrow at the next pre-harvest period when the market prices are extremly high ; while his debt has to be repayed just after harvest when the market price is very low. And since there is already a forward contract of repayment in kind calculated at current market prices, a fantastically high own rate of interest becomes automatically due from the peasant in course of the transaction itself. These twine modes of keeping the peasants totally divorced from both the capital market and the commodity market have been one of the principal forces acting against any competitive development in the agricultural sector, keeping resources extremely under-utilised and ill-allocated. Finally, the landowing money-lenders have been peculiarly more inclined to maintaining their economically secured position in the village rather than to engaging in implementing improved technology in their own profit rates. This is perhaps due to the fact that increased productivity may lead to an increase in the shares of the peasants who may then be in no necessity of incurring regular consumption loans from their landlords, which may ultimately lead to a weakening of the landlords, dominant position. This neo-zamindari psychology has been felt in several occasions when different government institutions tried to popularise improved technology in the rural areas.

One instance is that when the A.F.C.I. had lately offered credit facilities on relatively easy terms, for such purposes, the rich farmers refused to accept the offer. Even their own returns from the farms are seldom fed back to the farms, except for the basic necessary inputs, like seeds to carry on production. Rather these are spent on certain 'conspicuous' or luxury consumption which are products or services from the urban based industries. Thus there is a drain of agricultural surplus to the less important industries or even to other unproductive avenues.

It in clear from the above land relations that once the problem of indebtedness is solved the landless peasants will not only be freed from the bondage of debt, they will also be able to have access to the commodity market. In other words, it is their indebtedness which itself acts as the principal impediment against their deriving the benefits of a free and competitive commodity market. Thus solution to the first automatically ensures liquidation of the second.

One can, therefore, obviously imagine the tremendous impact that the new regional rural banks are likely to have on the rural economy. The particularly important feature of these institutions is that they will not only confine themselves to investment advances but will also provide for consumption loans "to serve the rural population particularly the vulnerable sections of society". This point has heretofore been missed. It was seldom understood that rural indebtedness is principally a result of continuous consumption loans, and that little or no such debt is due purely to investment purposes. The functions of these rural banks also include provisions of loans to the small and landless agriculturists. Setting up of such institutions may, therefore, usher a new era in our agriculture by freeing the labour from being tied up with the landowners and money-lenders. Competitive forces in production and market may also gradually develop, which has been totally absent in this sector.

However, whatever optimistic one might be about the effects of the new rural banks, it is worthwhile to keep in mind the earlier experiences of setting up banks in the rural areas.

In fact this is not the first time that the government has decided to set up banks in the rural areas. Earlier, when attempts were made to spread the banking system into the rural sector, it was found that only the relatively richer peasants who were capable of forwarding appropriate securities were able to draw upon the banks. As a result, a new business of borrowing from the banks by virtue of having some property rights and relenting the fund at a higher rate of interest to those without any security to offer grew up steadily. The difference between the banks' rates and the rates at which they were relent accounted for a good profit rate. Thus the resources of the banks were quickly dried up defying the purpose for which they were made. What is needed, therefore, is that these new banks should be sufficiently efficient to work even without insisting on property securities against loans. Credits should be given simply on the basis of a guarantee of repayment from the future harvest. This, of course, necessitates a group of well trained personels to assess the prospects of future harvest. But fortunately, in this direction, the idea of rural banks have already included the provision of training up personnels for the banks.

The lending provisions of the banks should be quite flexible to suit the varied environments in which they work. For West Bengal, it would be better, perhaps, to keep the rich peasants entirely outside the scope of lending, as they have repeatedly proved their chronic detestation for investment in improved technology and their proneness to misuse any easy credit. On the other hand, they may be encouraged to make long-term deposits of their savings in the banks, so as to maintain a healthy pool of liquid capital with the banks. Incentive for such a one way activity may be given by arranging for some tax relief on the part of the income that is saved and deposited to the banks. Interest accruing against such deposits may be given back monthly, which may act as a further incentive, as the land-owners' source of income from usury has now been stopped. This may serve the twin objectives of accelerating saving and using it for furthering production, and uplifting the rural poors by assisting them to get rid of their indebtedness. Mr. C. Subramaniam, Finance Minister, was right to emphasise in his presidential speech at the conference of the Chief Ministers and Finance Ministers of all states on the proposal and idea of regional rural banks held in Delhi on August 11 that the states should accelerate the programme of agrarian reforms, confer ownership rights on the share-croppers and other handicapped tenants, provide necessary infrastructure and should intensify extension efforts to set the forces of development at various points in motion. And now that land reforms are going to be placed beyond the jurisdiction of the law courts, the states should not find any serious obstructions to meet the end if they will.

(Continued from page 440)

Table II

Cost of Cultivation Per Bigha

Jute		Aus (Paddy)	
Seed 1 kg.	3.20	Seed 10 kg.	18.00
Manure	10.00	Manure	5.00
Sowing 2 mandays (Rs. 3.50 per day)	7.00	Weeding, sowing, etc. 10 manday,	35.00
Land levelling 3 mandays	10.50	Cutting, etc. 4 mandays	14.00
Weeding 10 mandays	35.00		
Cutting 5 „	17.50		
Carrying 5 „	17.50		72.00
Retting, drying, etc. 14 mandays	49.00	N.B. : Yield 3 mds. (1 mds.=48 Kg.) per bigha.	
	Rs. 149.70		

Table III

	1961-62	1975-76
Jute	21.68 per md.	48.6 per md. (inflated by 125%).
Paddy	9.94 per md.	22.44 .. ..

Thus our findings have been corroborated by the report of the Indian Central Jute Committee (now abolished), We assume that land productivity of both the commodities is the same—3 maunds (1 md. =48 KG.) per bigha. Like cost data, productivity data are very much variable and we have assumed identical productivity for the sake of simplicity. Anyway, it may lead us to think that two-to-one jute paddy price ratio would be the break-even point for jute growers because that would cover up the costs of cultivation.

Of course, we are to add the value of the by-products jute sticks and hay to the value of the total produce. The jute sticks are much more important to the villagers' life than hay because they are utilised as fuel in all families throughout the year. In remote villages where there is no supply of coal or sufficient wood the villagers have to depend entirely on jute sticks. Hay is also a useful by-product of paddy. But we have learnt from the peasants that they can do without hay but not without jute sticks. Hay is generally utilised as fodder. But this can be easily substituted in villages where there is plenty of grass lands and other things. But jute sticks are essentials on account of non-availability of substitutable thing. If we add up the (subjective) value of the by-products to the value of the produce, the break-even point may come down to 1.75 to 1 jute-paddy price ratio.

In the year 1961-62 the prices per maund of jute and paddy were Rs. 29.58 and Rs. 11.64 respectively, therefore the jute/paddy price ratio was 2.54. This price for jute was considered profitable and the peasants had sown jute in the maximum possible land. They grew jute in about one-quarter of their total crop land. As paddy is a food crop, they were forced to restrict jute cultivation. The annual (1961-62) report of the Cental Jute Committee reads: "Though there was some diversion of paddy land to jute during the year, paddy still occupied nearly about three times of the area sown to jute."

Though jute cultivation was more profitable, they could not engage more than 25% of their total land. It is true that they could sell jute and buy rice and actually they do so in lean months from July to October. But customarily they try to avoid this practice because they fear to rely on the market for the supply of food. This non-economic consideration like food requirement and some other facts govern the upper limit of jute acreage.

On the contrary, the situation has reversed in the last two years. The rice price is much higher than jute price and there has been a drastic shrinkage of jute acreage. It has reduced to 5% or 10% of the total cropped land. But one thing, even though the peasants are losing by cultivating jute, they cannot stop it altogether. This is because it supplies cash money as well as fuel. The peasants sell paddy only when they have no staying power. They know their food requirements, they know their surplus food grains, if any. But they fear to part with this surplus because of unforeseen contingencies like drought or flood next year, high price or non-availability of food, etc. But they have no such feeling in case of jute which is like cash money to them. So cash-commitment and fuel needs compel them to grow jute, however small. There has been a fall in jute production from 37 lakh bales (provisional) in 1973-74 in West Bengal to 26 lakh bales (provisional) in 1974-75. Unless jute growers are given sufficient incentives, there may be a further fall in jute production resulting in a severe raw material shortage and huge loss of foreign exchange.

1. M. Nerlove—'Estimates' of the elasticities of supply of selected agricultural commodities, Journal of Farm Economies, 1956.

2, Sinha A. R.—'A preliminary note on the effect of price on the future supply of raw jute', Shankya V. (1941), 413-416.

3. I. S. I.—Indian Economy, A Preview, 1971.

Review

The Runaway Rupee, Nabagopal Das, the World Press Private Limited, Calcutta, 1975, Price Rs 20.00, £ 1.60, $ 4.50.

In recent years much has been said that inflation in India is a part of an international phenomenon. Dr. Nabagopal Das is reluctant to accept this logic without modifications. He holds that prices in India have risen because of local failures. In probing out the causes of inflation in this country he has pointed out to almost all the known factors contributing to excess demand and excess in costs unrelated to productivity, propped by black money and governmental corruptions. He then attempts to analyse some monetary devices to combat the inflationary force but finds their inadequacy to stand against. He casually but importantly expresses his good wishes that "all sections of the community must cooperate to find a solution" and makes an oblique observation on the RBI's credit policy. Enthusiastically the banks have been financing small scale industries but "some of these small scale units exist on paper only". His critical analysis of the suggested demonitization, remonitization, and "Semibomla" drives him to conclude that they will fail to go to the root of the problem. Even the "Brazilian experiment" will have a limited success. For "the basic need is fiscal disciplines" and in this respect the Government has by and large failed as also in its action against black money.

Then what is the road to stable growth ? Dr Das seems to have no answer to it. He repeats this way or that that "the real obstacles to ending inflation are political, not economic". Optimistically placed, "inflation is not a mysterious and uncontrollable disease." True, from interpretational point of view. But possibly not from the point of "how to change it". What actually is, we must learn to live with inflation. What is controllable is the intensity and spread of inflation for which a democratic developing country has no readiness of mind.

The excellence of the book lies in its simple explanation of the most intricate problems of inflation.

The Structure of Interest Rates in India, Asis Kumar Roy, The World Press Private Limited, Calcutta, 1975, Price Rs 30 00, $ 6.00, £ 2.00.

The book studies the technical character of Indian money market with special reference to the strength and weaknesses of the different forms of interest rates and the RBI's control over them. Dr. Roy pinpoints the weaknesses of the Indian money market in "preponderance of currency in total monetary resources, the paucity of assets, the absence of active sub-markets, seasonality of the economy, and above all, the existenee of the non-monetized sector". His study of the bank rate and the other rates leads him to observe that "Since the RBI has effective control over the short end of the gilt-edged market, it can very well regulate the behaviour of rates". On Treasury Bill rate his observation is equally illuminating : the bill rate is "almost pegged at a low level". The market of the call money rates "enables the RBI to assess market conditions and the state of expectations in it." In connection with the risk-bearing securities he comments, "the structure of interest rates in the organized sector lacks cohesion to the extent the yields on equities generally remain unresponsive to monetary impulses generated elsewhere in the money market". Regarding bazaar rates, they "are free from seasonal impact and stand at a higher level".

Dr. Roy has not offered much of his own suggestions to improve the structural defects of the Indian money market. But that has not marred the merit of the book. For his analysis is so penetrating and revealing that the RBI will find in it the logical reasonings of avoiding to work within the "institutional and ideological framework".

The Select Bibliography will be useful to researchers in monetary economics.

Indian Economy, M. S. Rao, Premier Book Co, Delhi, 1975, Price Rs 13.50.

The book presents the important current economic problems of India in a question-answer form to the students. They may find interest in it.

Fat Sasha and the Urban Guerilla, David Bonavia, National Academy, Delhi, 1974, Price Rs 5.00.

The author claims the "book is not a novel, but a factual account of real people, conversations, situations and events in the Soviet Union". It gives an exciting study of the inner Soviet Union.

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The Writings of the Wall

Where our economy has been leading us ? Where our society has been going ? These are questions which have posed before all minds—hoarders and professional politicians are no exceptions to it. 27 years' of our recent economic history tells us that we shall have to live on our own flesh ! Why ? If it is asked like this, comes the very smart reply with a long trail of causes - national and world. How many of these causes are unforeseenable ? It is beyond comprehension why power should be a shortage. And iron and steel. And wagon. And fertilizer. Why flood and drought cannot be an insurable risk ? Why the labour should be unproductive ? And why there will not be a shortage of hoarders ? Only shameless persons can say that the country is in the grip of hoarders and power is short because of theft of cables and power machinery.

Only "fascists" can ask like this with the ostensible motive to destruct the democracy ? If to ask for the truth is the act of a fascist, the starving millions and the younger generations, who will live for longer years, have the noble privilege of being fascists. And the cry for "democracy in danger" ! Has there ever been any democracy on our soil that it will be in danger ? Democracy is not a universal suffrage nor a bundle of "fundamental rights" to cover up the evil design to rule as a dictator. Democracy is the correct reflection of the decisions of the individuals-in-maturity. In a developing democracy both individuals and democracy complement each other in the process of their blooming in maturity. Do such individuals exist or had ever been made to exist ? They cannot be made by slogans or organising some citizens for democracy. It requires economic sufficiency, economic independence for all, and democratic education. Breaking off the Assemblies or Parliament is not the right answer either. It will bring the same force, if not the same party, to power. Power without purpose and resolute will is the pretender of crisis, of which the country has had enough.

The poorest of all attitudes is the budgetary approach to mitigate the basic social and economic ills. By redistribution of perpetual poverty mass enthusiasms to work cannot be created. Income redistribution or income policy is meaningful only when the income generated and regenerated is redistributed with an open social eye and mind to electrify the masses to work for national and socialistic causes. This will surely multiply wealth at a stupendously greater rate. Budget has a very limited scope in this regard. But one thing it can do ; it can very easily increase the inflationary gap to keep the dangerous show of economic progress that is what the Central budget and the Railway Budget have highlighted.

The next poorest show comes from the Planning Commission. Meticulously it wants to be realistic, meticulously it fails being swept over by the acts of its own guesstimation. The Chairman of the Planning Commission may say, "With each Plan, and each year of a Plan, we strengthen the foundations of our economy and acquire a greater grip over the means to subdue poverty and diminish the disparity between classes and regions", and this may please the people surrounding her but not the masses who live in and by reality. It is wrong to hold that the people do not want a planned economy. They do want but not the one they have. The Chairman may feel complacence that although the fuel crisis and prices do affect the fifth plan yet "the general objectives of the Fifth Plan are not invalidated." But can "objectives" be real when the obtaining "conditions" are in conflict with and contradictions to them ?

It is not true that "Enthusiasm for the Plan has waned in certain sections of the middle classes because unemployment and prices have risen." For, first, let alone the "certain sections of the middle classes", the people as a whole had not at any stage of the four successive plans been enthused. Second, in all countries there are unemploment and price rise (in communist countries they are just suppressed and repressed). But in a very few countries, India is typically one, the people rush to damage public property. Political motivations of some political parties whose ideology stands on the destruction of democracy and wrecking of the Constitution from within and also by "armed revolution" apart, the people indulge in this antinational activity by the impulse of utter frustration that the Plans have by grains offered to them.

The time is now before us to admit boldly our guilts that the leaders have failed to build up a man-base and a capital-base for the country strongly guarded by nationalism. There is not a single country in the world which has become great without having these two guarded bases. No shame now to admit that we have wasted away in luxury living of a few and professionalism in politics the transferred savings of the West, and allowed the import of "revolutionary theory" to test the strength of our "democracy," making both economy and democracy a laughing stock. Now that the Western savings transfer has slided back and the imported revolutionary theory has proved its worthlessness the hollowness of the social and economic structures is exposed and a social revolution of its own has become imminent. This brings us back to those years of upheavals that gave rise to dictatorship in Russia, Germany and China, to mention only the extremes.

An Empirical Model for the Analysis of Seasonality of Economic Variables—I

Ranen Ghosh*

The seasonality of economic variables poses difficulties to the estimation of an economic model. If the parameters of this economic model are estimated, whatever estimation method is chosen, without due regard to the seasonality of the variables included in the model, then these parameters would not be well estimated. So, it is imperative that the seasonality of economic variables should be considered in an economic model. The problems of seasonality of variables are relevant only if the data used for estimation are time series with time intervals less than a year, say, quarterly, monthly, weekly, daily, etc. Now-a-days, with improved techniques of data collection many an economic variable is presented in quarterly, monthly or such short time intervals. Consequently, many economic models are now-a-days built on these short-period data for different variables.

How to analyse the seasonal behaviour of an economic variable is a problem—a typical challenge to econometricians. Since this behaviour of the economic variable is qualitative in nature, and the factors which can account for the seasonal behaviour of this variable are mostly qualitative, observed quantified data which may be relevant to the analysis are hard to generate. To meet such a challenge, an econometrician is obliged to devise an appropriate technique of analysis.

The conventional time series analysis as used to separate seasonal variation in time series data involves the following steps. Assume monthly data for an economic variable, say, money supply :

(i) 12-monthly centred moving averages are computed from the monthly data.

(ii) The ratios of original data to these moving averages are

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obtained. These ratios may be called moving seasonal index (M.S.I.).

(iii) The moving seasonal indices for each month of all years are plotted on arithmetic graph paper. If it is found that the graphs of M.S.I. for these months are non-linear, it means that the seasonal index has changing patterns. Then, the construction of a constant seasonal index is inappropriate for this variable.

This leads to the following further steps to construct the changing seasonal index for the variable.

(iv) To each graph of the monthly M.S.I., a simple trend is fitted by free-hand drawing. A trend is simple when the underlying mathematical function is simple. Still the trend is drawn free-hand.[1]

(v) Taking the months of a particular year, the trend values for all months are read from these fitted trends, which should add to 1200. If they do not add to 1200, the trends are suitably adjusted. This adjustment is to be made until the trend values of all months in each year add to 1200.

This monthly seasonal index, whether constant or changing, as found appropriate, is used to adjust the original data for the economic variable. The original monthly data are divided by the seasonal indices for the corresponding months and are multiplied by 100, thus generating adjusted data on this variable. This adjusted data are free of seasonal movements and are called seasonally adjusted data.

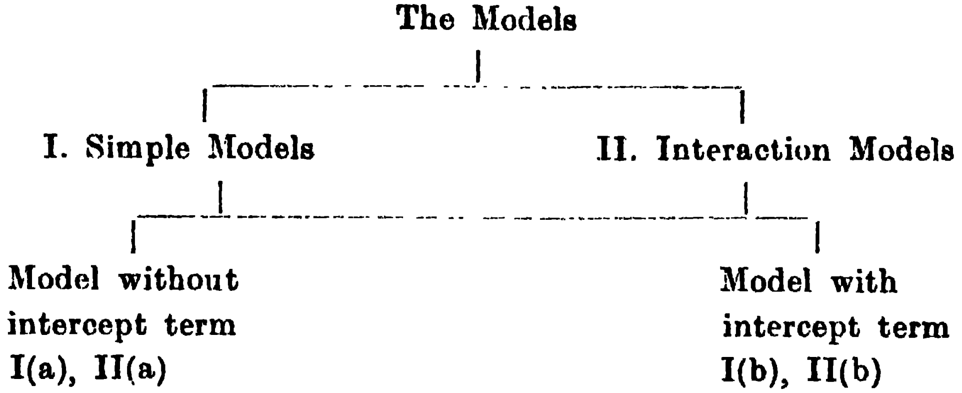
Next, the proposal is to use these seasonally adjusted data on relevant economic variables to estimate an economic model. One difficulty in using the seasonally adjusted data on economic variables for estimating an economic model is due to the constraint that the trend values for all months of each year in the sample are to add to 1200.

A more sensible position is to specify an economic model in such a way that the seasonality of the variables is also estimated together with parameters of this model. This leads us to regression analysis.

Section II (1) : Regression Analysis

Regression analysis is applied to estimate the seasonality of an economic variable. A few models are analysed for this purpose. As will be evident from the following discussion, each of these models considers only one economic variable, as if these models are concerned with seasonality. So that other relevant economic variables are not mixed up in a single regression model. The following discussion will be developed with illustration of seasonality of money supply in Ghana. (See Ghosh 6(b)).

The models may be classified as I, Simple model and II, Interaction model. These are sub-classified as shown in the following scheme.



The specification of the models are as follows :

I. Simple Models

$$\text{I (a)}: \quad Y=a_1X_1+a_2X_2+a_3X_3+a_4X_4+u_1 \quad \ldots \quad (1)$$

$$\text{I (b)}: \quad Y=a_0X_0+a_1X_1+a_2X_2+a_3X_3+u_2 \quad \ldots \quad (2)$$

II. Interaction Models

$$\text{(a)}: \quad Y=a_1X_1+a_2X_2+a_3X_3+a_4X_4+a_5X_1X_5$$
$$aX_6X_6+a_7X_3X_5+a_8X_4X_5+u_3 \quad \ldots \quad (3)$$

$$\text{(b)}: \quad Y=a_0X_0+a_1X_1+a_2X_2+a_3X_3+a_4X_0X_5$$
$$+a_5X_1X_5+a_6X_2X_5+a_7X_3X_5+u_4 \quad \ldots \quad (4)$$

The models I(a) and I(b) give similar results in this special case where the explanatory variables (X's) are all dummy variables as defined below. (This has been pointed to me by Mr. A. G. Blomquist. of Economics Department, University of Ghana). Similarly, the models II(a) and II(b) are alternatives. However, in some respects models I(b) and II(b) give more information with less labour than the models I(a) and II(a).

The models with intercept term, i.e., I(b) and II(b), as specified in (2) and (4) above show the differentials in the influences of seasonal forces, and may be called "differental" models. The models without intercept term, i.e., I(a) and II(a), as are using the functions (1) and (3), show absolute influences of seasonal forces. If, by conventional statistical analysis for seasonal variation, it is found that the seasonal index has changing patterns, the interaction model should be an appropriate specification for quantifying seasonal influences. The interaction model is so specified that the sample period under study is divided into two or more sub-periods, each sub-period having the seasonal index with unchanging patterns. The simple model is an appropriate model when the seasonal index has unchanging patterns throughout the sample period. So, the simple model may be used to analyse the seasonal forces for a sub-period, for which the seasonal index has unchanging patterns. even though throughout the whole of the sample period, the seasonal forces have varying patterns of behaviour. A simple model is simple and avoids complicated analysis, though it is limited in scope. An interaction model is more complicated and gives detailed results.

The variables of the models are specified as follows :

(a) y=the dependent variable ; a true economic variable and the only such variable in the model ; for example money supply, national income (monthly data ?), price level, and so on.

(b) Independent variables : these are X's and are all dummy variables as specified below :

$X_0=1$, always, that is, for all observations of the sample.

$X_1=1$, if observations belong to the first quarter of a year
=O, otherwise.

$X_2=1$, if observations belong to the second quarter of a year
=O, otherwise.

$X_3=1$, if observations belong to the third quarter of a year
=O, otherwise.

(Continued on page 169)

International Trade and Less Developed Countries

Joseph Manickavasagam*

A. Introduction

Since World War II the relative position of the less developed countries (LDCs) in international trade has worsened, and they have not been able to maintain their share in total world trade. Although the total exports of the LDCs rose by some 90% over the period 1953-67, their share of total world trade declined from 25.5% to 18.8%.[1] Over the same period total exports from the developed countries increased by 178.6% and their share of total world trade increased from 64.2% to 69.7%. The change in the relative trade shares reflects the fact that the trade is being increasingly carried on among the industrial nations.

To remedy this situation, several proposals have been put forward. In this paper we will take a look at some of these. Our discussion will consider the following : Firstly the problem of preferences for export of manufactured and semi-manufactured goods. Secondly, the question of international commodity agreement. Thirdly, stabilization measures, and, fourthly, other kinds of compensatory measures and, finally, other issues raised by UNCTAD.

B. Preferences for Manufactured Products

One of the two important proposals for trade in manufactured goods made at UNCTAD—I was for the establishment of preferences in the markets. This idea was primarily of the developed countries for the exports of manufactures by the LDCs. It was primarily developed by Raul Prebisch. As proposed by him the preferential system would work as follows :

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* Malaysia.

[1] Cutajar and Franks : "The Less Developed Countries in World Trade" : London : Overseas Development Institute 1967.

Preferences to be granted in principle[2] by all (or most developed countries to all LDCs to all LDC manufactures on the basis of duty free entry. Preferences to be granted separately to each industry in each lDC ; preferences at least for 10 years from the time. when the first plant in the industry starts to export, and the developed countries should extend preferences uniformly on their part. Preferences should not to be applied to products in which the LDCs are already competitive ; each developed country should have a maximum preferential import quota, within a global quota for preferential imports into developed countries as a whole. Phased application of preferences which means that preferences are kept in suspense until a particular LDC is able to take advantage of them and might also mean that the less advanced LDCs come in after the more advanced have been phased out. If supply of preferred products exceeds the global quota, the share of the total available to any one LDC is to be limited. LDCs whose exports are adversely affected by the loss of the traditional bilateral preferences are to be given priority in aid allocation.

Arguments Against Preferences

It is to be noted that the scheme as proposed is in direct violation of the rules of GATT. However, most of arguments that have been put forward against preferences which we will consider below are, as Johnson says, "Inconclusive and depend for their strength on the implicit assumption that the contribution that trade preferences can make to the development of LDCs is relatively small.[3]

The first argument that has been put forward is that the establishment of preferences would cause serious political frictions among and between the developed and the LDCs. Gardner Patterson[4] points out, for instance, that frictions would arise between African States that would want to continue their existing preferences in the Common Market, and other LDCs who would insist on a uniformity of preferences. The granting of preferences to only Latin American countries by the U. S. may be opposed by the non-Latin American LDCs. Differences also arise among developed countries, since some want no preferences, some want selectively negotiated preferences, across the board. But it can be argued that if a preferential system were to result in significant contributions being made to the development of the LDCs, then these problems can be resolved through normal international negotiations.

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[2] Report by Secretary-General of UNCTAD : New York : United Nations.

[3] Johnson, Harry : "Economic Policies towards LDC" pp 168-169. Washington DC, The Brookings Institution 1967.

[4] Patterson, Gardner : World Tariff Preferences help Economic Development : Lloyds Bank Review, No. 67 (April 1965) pp 18-30.

Secondly, it is argued that some developed countries are themselves vulnerable to discrimination against there manufactures and hence would disrupt their economies as for example the case of Canada and Australia, who though developed, tend to be weak competitors in the world market for their manufactures. The reply of the LDCs to this is that many decades will pass before they could achieve a sufficient level of competitiveness on a sufficient number of products to constitute any major problem to developed countries. Furthermore it is argued that a preferential system would help developed countries by allowing factors of production to be moved out of inefficient declining industries into more productive activities where they enjoy a comparative advantage.

Thirdly, it is maintained that preferential arrangements would involve a great amount of government surveillance and control of trade, and that this would result in large administrative costs. However, it can be argued that administrative problems and costs should be compared against the potential benefits of a preferential system, since it may be that the benefits outweigh costs.

Fourthly it is argued that a preferential system would benefit only a few LDCs, who are currently major LDC exporters of manufactures, as for example India, Mexico, Hong Kong and Israel.

Fifthly, the establishment of preferences, it is maintained, requires U.S. participation. Participation by the U.S. it is argued, would result in Congressional interventions in the trading privileges of a particular country and that it may be used as a device for punishing or rewarding a particular country. "The fear of what might happen if Congress gained control of a discriminatory U.S. : tariff policy appears to be a powerful underlying aversion to any form of preferential trading arrangements"[5]. Again this argument would depend on the benefits that a preferential system would provide. The argument itself, however, depends on the American political scene.

A sixth line of argument put forward is that preferences would be unlikely to contribute to the development of the LDCs. Gardner Patterson[6] argues that tariffs on most industrial goods are already very low in the leading industrial countries, and that the scope for tariff preferences is limited. The tariff rates, Patterson argues, seems to average between 10 and 15 per cent. If tariff preferences of 50 per cent were granted, the price of a LDC product over competitors from a developed country would be about 5% to 7% price advantage. Such a small price advantage, it is argued, would not be decisive. If the LDCs are unable to compete without a trade preference they will not under these circumstances be able to compete as well.

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[5] Johnson : pp 167.

[6] Patterson : Op. cit.

This line of argument at first sounds plausible, but is not satisfactory. In the first place, even though average tariff rates may not be too high, tariffs on individual products could be substantially higher. Secondly, it is quite arbitrary to presume that tariff preferences would be limited to, for instance, 50%. A complete preferential treatment of certain products could perhaps give much higher price advantages than 5% to 7%. Furthermore as Johnson[7] argues, what really counts is not the final or manifest tariff rates, but implicit rates or effectives rates of protection. Fairly low final rates could conceal much higher effective rates of protection. If that is the case, the question of preferences would have to be viewed in a completely different perspective.

Arguments for Preferences

The arguments for preferences centre to a large extent around the idea of infant industry protection. It should be noted, however, that this argument differs from the ordinary infant industry argument. In the ordinary case the consumers of the country in question will have to pay higher prices and subsidize producers. In the case of preferences, it is the consumers of the foreign country, the one granting preferences, who will have to subsidize the producers of the LDCs, so that they will eventually be able to compete at world market prices.

This, therefore, implies a firm for transfer of external resources from the developed country for investment in the industrialization of the LDC. The immediate question that arise is, would it not be better that this be given as a form of aid by the developed country to the LDC. Against this, it can be facilitated by their having access to the markets of the developed countries. Furthermore, as Meir[8] points out, foreign aid programmes would not otherwise be increased, and trade preferences might be politically easier for a developed country to accept than a direct increase in aid (e.g. taxation). On the other hand it can be said that since preferences substitute for aid, it may provide the preference-granting country with an excuse for reducing its aid programme.

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[7] Johnson : pp 182.

[8] Meir, The International Economics of Development, pp 289 New York, Harper and Row, 1968.

Another important question concerns the choice of industries that should be given preferences. Presumably those industries in which the LDCs have or could be expected to have a comparative advantage would be chosen. But "the most heavily protected industries in developed countries are likely those in which the LDCs have a potential comparative advantage, it is unlikely that they generally represent the best infant industry prospects for the LDCs.[9]

It therefore seems that the infant industry argument is of a doubtful validity. However, this argument has tactical appeal since GATT now recognizes infant industry protection, but when this argument is internationalized the implications are different.

As Mier says a "Preferential arrangement is only 'second-best', or even 'third best', if it leads to trade diversion in the preference-granting country, as it is most likely to do".[10] The results of trade preference can therefore be said to depend on whether they cause trade creation or trade diversion. Trade creation is the shift in production of a given good from a higher cost to a lower cost national resource, i.e. efficiency increasing shifts ; while trade diversion is efficiency reducing shifts. If it is the former, they are beneficial, if it is the latter, they will lead to a lowering of the world's welfare and most likely the welfare of the trading partners as well.

Two examples of possible effects of preferences could be useful. One is where the preference-receiving country produces only a small part of the preference granting country's total imports of the goods in question. After it has been granted the preference the LDC can increase its price of this export from the world market price up to the tariff-included price in the preference granting-country. This means that the producers in the LDC will get a windfall gain. If they can expand production at not too steeply rising costs, it would possibly yield a handsome profit, which they can reinvest for further expansion and so on. If they can acquire factors of production, for instance, labour at only substantially increasing costs, their profits would perhaps

[9] Johnson : pp 182.

[10] Meir : pp 292.

not increase much but in the long run the country would get a substantial increase in its volume of trained labour and so on. In this event, the tariff-granting country would gain nothing, all the gain would go to the preference-receiving country.

Another example at the other extreme is that where the tariff-receiving country is the dominant world producer of the good in question. Then, no matter, what happens in the tariff-granting country, the tariff-receiving country would have to go on selling the product at world market price. This means that producers in the tariff-receiving country will take over the whole market in the tariff-granting country, but this in all likelihood will be of only a marginal concern to them, and they stand to gain little. Here the gain is concentrated on the tariff-granting country, which will benefit in two ways. First, because the consumers can buy the goods in question more cheaply ; second, because the country will get the goods at a lower opportunity cost by importing it than by producing it at home.

It is rather difficult to estimate the cash benefits which would accrue to LDC as a result of preferences.[11] From a strictly economic point of view, it is not easy to argue either firmly against or firmly for trade preferences. In the absence of any detailed empirical support for a particular scheme, Meir suggests "a general and automatic scheme, whereby all developed countries would grant the same degree of preferences (at least 50% of the existing M.F.N rate) on all exports of manufactures and semi-manufactures from all LDCs without requiring reciprocity for a limited period of time". Considering such a scheme within the existing tariff structures, Johnson submits that trade preferences even if not 100% level might provide powerful incentives for the expansion of industrial exports from developing countries.[12]

The preferential system as proposed in UNCTAD—I was opposed by some developed countries, particularly by U.S. However, in early 1967 President Johnson announced that his administration was prepared to explore the possibility of establishing a generalized scheme. The scheme after considerable discussion in the OECD was presented to UNCTAD—II. This scheme fell far short of the demands of LDCs, and all that was achieved was a unanimous commitment to implement some form of generalized preference system as soon as the details could be worked and agreed upon. However, so far it has not been possible for agreement to be reached on any single scheme.

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[11] Pincus : Trade Aid and Development", Washington D.C., Council on Foreign Relations Inc. 1967 (Pincus makes some estimates, pp 190-94).

[12] Meir : pp 292.

This is perhaps natural taking into account the large economic and political complexities involved. Ultimately, the strongest argument for tariff preferences will perhaps have to be of a very pragmatic nature. The need for an increase in the rate of economic development of most of the LDCs becomes pressing each year. It is obviously very difficult to find and implement any policy means that foster development. Against this background it is natural to try and see if tariff preferences could not be an efficient means for accelerating development. This could in the end be the strongest reason for trying to work out a scheme for tariff preferences that would prove viable.

C. International Commodity Agreements

The other big problem which UNCTAD has been concerned with is that of International Commodity Agreements for primary products. Exports of primary products are by far the the most important source of foreign earnings for most LDCs, accounting for 85% to 90% of their export earnings. For example, in 1965 81% of Ceylon's export earnings came from tea, rubber and coconut products, and 82% of Ghana's from cocoa, diamonds and manganese ore. But prices on primary products fluatuate widely, and this leads to instability. It is argued that if commondity prices could be stablized, an important obstacle to development could be eliminated and hence a call is made for the widespread establishment of international commodity agreements.

The ground here is very slippery. The traditional view given above, sounds convincing at first, but a careful examination is necessary. At the outset it might to stated that it is not clear what is to be stabilized. Stabilizing prices is not the same thing as stabilizing earnings, and stabilizing export earnings is not necessarily the same thing as stabilizing real income.

The history of international commodity agreements is not very encouraging. International commodity agreements have been attempted since the 1920s but with limited success. Since World War II, agreements have been concluded for only 5 commodities: wheat, sugar, coffee, tin and olive oil. Two of these agreements on olive oil and sugar, do not currently influence international trade. The sugar agreement broke down in 1962 when trade between Cuba and U.S. ceased, and the olive oil agreement is primarily concerned with the coordination of domestic national policies ; trade in olive oil comprises only 5% of total world production. The wheat agreement has been of little importance, the price maintaining policies of the two main suppliers, the U. S. and Canada, have instead played a dominant role. Nor do other agreements seem to have been particularly successful. The coffee agreements seem to have been particularly successful. The coffee agreemet, made in 1963 has encountered serious difficulties, first as a result of numerous requests for revision of basic quotas, and then of a sharp rise in coffee prices, due to supply shortages in Brazil. The problems of the coffee agreement have been derived from its arrangements. Several exporting countries produce quantities far exceeding their quotas and have had to build up vast stocks, leading to substantial smuggling of 'cheap coffee." Coffee is moreover a non-homogeneous product. World demand is shifting towards African "robusta" type coffee used to make instant coffee. Producers in Africa have consequently become dissatisfied with their historically determined quotas. A similar dissatisfaction is found in countries which have only comparatively recently established in export trade in coffee It is, at any rate, too early, to say anything more definite about the usefulness of the coffee agreement.

The difficulty of negotiating international commodity agreements are many. First, it arises from the fact that the agreement may be intended to serve a wide variety of purposes, including stabilizing the market and increasing export earnings. The objectives sought are often lacking in clarity and there is a wide divergence of interests among and between producers and consumers.

Secondly, the Havana Charter provides that agreements should include producers and consumers, with equal voting rights. This institutional framework rules out the possibility of agreements to "raise producer incomes unless it is accepted by consuming countries against their own economic interest."[13]

Thirdly, each of the main forms of agreements has its inherent weaknesses. Multilateral contracts and buffer stocks require the ability to forecast price trends, and buffer stocks may exhaust their finances in coping with unexpected downward price trends. Export restriction schemes run the risk of being undermined by outside producer competitors, unless restrictions are policed.

Fourthly, the technical and economic characteristics pose problems. Thus, only cheaply storable commodities are suitable for buffer stock operations ; non-homogeneous commodities like coffee and

[13] Johnson : pp 139.

tea come in a variety of grades whose price relationship may change rapidly with changes in taste and technology posing problems for stabilization schemes.

International Commodity Agreement as a Stabilization Method

In the export of primary products by LDCs, two problems have come to be distinguished—instability of primary product prices and more generally of export earnings. This instability, it is claim, is more severe in LDCs because of their heavy dependence on the export of one or two primary products. However, stabilizing prices and stabilizing earnings do not amount to the same thing. Stabilization of money proceeds or money incomes is not the same thing as stabilization of real income if the general price level changes.

Alisdair McBean (14) finds that empirical evidence does not support the orthodox assumption. His findings can be summarized as follows : less developed countries have only insignificantly greater fluctuations in their export incomes than industrial countries Three causes that could have been expected to result in instability—commodity concentration of exports ; proportion of primary goods in total exports ; and geographical concentration of exports—all have little value in explaining the fluctuations that have taken place. One extremely important finding is also that it is not fluctuation in prices that have primarily caused the fluctuations in export incomes. The main causes are on the supply side.

McBean chose 12 of the LDCs that had especially large fluctuations in their export income—Argentina, Boliva, Ghana, Haiti, Indonesia, Iran, Iraq, Korea, Malaya, Pakistan, Sudan and Vietnam. In four of these, Malaya, Indonesia and to a certain extent Pakistan and Vetnam, price fluctuations had some bearing on the fluctuations of export incomes. But, in the others, and also to a large extent in the four countries, the main cause of fluctuations in export proceeds is the fluctuations in the output produced. The main difficulty of the LDCs in primary products lies in controlling supply. It is the variations in the output produced that caused fluctuations of export incomes. Part of the cause of supply changes among the 12 countries referred to also lies in the political disturbances. This point is supported by some other economists like Myint, who argues that when we look closer into the causes in Latin America or Asia, we frequently find that internal domestic factors, such as political instability,

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14 McBean, Alisdair : Export Instability and Economic Development.

inflation and overvalued currencies, and excessive hostility to foreign owned mines and plantations play an important part in slowing down exports.[15]

Another of McBean's findings is that the changes in export incomes that have taken place have not led to such adverse effects on the growth of the economies as could have been expected. Built-in stabilizers and high marginal propensities to import seem to have offset fluctuations to a large extent. Therefore, fluctuations in national incomes are not so large as could be expected.

Empirical considerations thus lead one to the conclusion that stabilization schemes are more limited than at first sight thought likely. Much care must be taken in defining the objective of stabilization schemes and in stabilization measures.

D. Stabilization Measures

Instances however could arise when commodity agreements could serve a useful purpose. There are several types of stabilization schemes that could be constructed. One is the use of buffer stocks. The operators of the scheme own a stock, either of money or commodity. They use this stock to mitigate fluctuations in prices by selling from the stock when prices are high and buying the commodity when the prices are low.

This scheme is only possible for certain products with low storage costs. There is always a cost involved in the form of interest on the capital invested in the stock. If additional costs, such as costs for warehousing space, refrigeration and pesticides are high, a buffer stock scheme becomes impracticable. One major difficulty is in foreseeing the long-term equilibrium price. If the operators are too optimistic about prices they will try to maintain too high a price, and the stocks will keep growing. This cannot go on indefinitely ; eventually the stocks will have to be disposed of at a loss. If the prices should be set too low, which is more unlikely, the stocks will instead be sold out and the prices can only be kept down for a limited period. Buffer stock schemes can therefore only be used to mitigate short term price fluctuations.

A second type of stabilization scheme is a restriction scheme. This means that producer countries agree to restrict production or exports of the commodity in question in order to maintain price. Restriction schemes can be useful, especially if competition among producers is keen and demand inelastic. Then price might be driven down very low if nothing is done. Under these circumtances, prices can be maintained and the total revenue increased by restriction of exports.

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[15] Myint : 'International Trade of Developing Countries' in 'International Economic Relations', ed : Samuelson P : McMillan 1969, pp 20.

Restriction schemes however have certain drawbacks. One is that they are usually difficult to enforce for any long period. There is always a temptation for a single producer to break away from the scheme, thereby being able to sell a large quantity at a good price. Tendencies of overproduction which usually follow from the price-maintenance policy can easily cause a break-down of the system.

If the price is maintained at a high level for some time, this can also create difficulties on the demand side. The demand elasticity could be low in the short term, but it could be substantially higher in the long run. If policy of high prices could then mean that the demand for the product will not expand as much as it otherwise would. It could also lead to the development of competing products, for instance, of a synthetic kind, that can prove very damaging in the long run. What has happened to rubber is an illustration of this danger.

A third type is multilateral contracts. Multilateral contracts aim to "Avoid the transfers of real income between consumers and producers implicit in price swings."[16] Such a scheme specifies the maximum prices producers can sell at specified quantities and specifies quantities consumer are obliged to buy at a specified minimum price. The advantage to producers depend on price fluctuations being mainly the result of demand changes. Such a scheme requires no building and operating of stocks, restriction of trade or production. The main difficulty of this scheme lies in the ability to forecast the normal or long-run equilibrium price. If the forecast price falls outside the price range, the result will indeed be a regular transfer of real income and thus defeating the objective.

A fourth scheme is essentially a superior version of the multilateral scheme, and was proposed by Meade at the 1964 UNCTAD. The main idea behind the Meade proposal[17] is to try to separate the distributional effects of the price mechanism from its allocative effects. When the price of a product falls, this is a signal to producers to produce less and to consumers to consume more. This is the efficiency aspect or allocative aspect of the price mechanism, and this we usually do not want to interfere with. But price changes also have distributional implications. When the price falls, producers get hurt because their incomes fall. So do workers in the producing country ; the tax base of the government shrinks, and so on. This, at least partially can be avoided by the Meade Scheme. The scheme is thought of as one between governments. If the price falls and the producers, say, in Ruritania get lower incomes the consumers in, say, Urbania (consuming country) will benefit by lower prices. But they will now have to pay more in taxes, and this increase in taxes will be transferred to the government in Ruritania. The government there can then dispose of this income as they see fit. They can directly subsidize producers, or they can invest it for development purposes.

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[16] Johnson, pp 147.

[17] Meade : 'International Commodity Agreement, Lloyds Bank Review No. 73 July 1964, pp 28-42.

Again the difficulty of such a scheme is that of forecasting prices correctly. The Meade scheme is both simple and elegant, but it has certain drawbacks. An important one is connected with its aggregated nature. If a producer is small and a change in his output does not affect the world price of the goods, it could well be that even through the output of this producer is very low one year, prices would not exceed the "standard" price. The country would then get no compensation, even though its export proceeds fell considerably. A scheme such as Meade's has difficulties in dealing with fluctuations caused by changes in the supply of a single country. This is a serious deficiency as we have seen that the primary cause of fluctuations in export earnings seems to be difficulties in controlling supply conditions in the primary producing countries themselves.

Generally speaking, international commodity agreements are confronted with many problems and difficulties. Even if they are successfully negotiated their implementation produces various inefficiencies. Pincus has candidly summed it up as follows[18] : "The dominant conclusion which emerges from investigating all these subjects of international commodity trends......is should the effect of these policies be substantial, they are unlikely to be unimportant as sources of increased capital or trade. Policies to increase or stabilize commodity earnings cannot proceed much faster than Northern (developed countries) willingness to act on the broader problem of developing country's growth."

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[18] Pincus : pp 294

E. Compensation Measures

So far our discussion has been on the negative side. It seems that the trend in the thinking of most economists is away from commodity agreements. The theoretical and practical difficulties that they entail seem to be very great. Another possibility is compentionary financing of fluctuations in export earnings,

The first scheme is that devised by the International Monetary Fund. This is a scheme to help LDC whose export earnings decline to get easier loans than usual. A country can temporarily borrow 25% of its IMF quota, subject to the approval of the Fund, if the export earnings fall below a certain moving average. This scheme has however been criticized on the grounds that it is too limited and conservative. Therefore, it has been suggested that a supplementary Finance Fund be established. The supplementary fund would compensate LDCs for deteriorations in terms of trade because of falling prices of exports for which it was not possible to negotiate or operate a commodity agreement. When export earnings fall below the expected level, the LDC in question would receive from the Fund a loan (in certain circumstances may be convertible into grants). The proposal contains a recognition that the plans for commodity agreements have an element of aid in them, and therefore aid given under this proposal would be in a form not tied to commodity trade but to unexpected shortfalls in export earnings. The proposal was originally put forward by Britain and Sweden. but there appears to be little hope for its adoption in the near future.

A second type of compensatory measure is the creation of a development insurance fund, which was proposed in 1961. This scheme, as proposed, requires that members make a contribution to developed countries of a percentage of their national income and LDCs a portion of their export earnings. In return members could claim automatic compensation for a fall in export earnings.

A third type is a proposal put forward by France, for levies on imports by developed countries from LDCs to be refund in whole or in part. On goods that both countries produce, a tariff can be levied on the imports from the LDCs. This will make prices on imports and domestically produced goods coincide. A part, or the whole, of the tariff revenue can be then reimbursed to the LDCs. If these goods are a primary product not produced in the developed country a tariff can be viewed as a tax on consumers take up by the government in the developed country on behalf of the government of the LDCs. This plan, however, has all the defects and weaknesses of orthodox agreements.

One of the great advantages of compensatory measures like the supplement finance scheme is that it goes straight to the problem of shortages of foreign exchange for development. But such schemes have costs of administration, and often the compensation itself is partial and requires repayment. As Johnson says, empirical tests show that various schemes for compensatory financing are of a limited nature.[19]

F. Other Issues Raised by UNCTAD

Regional Preferential Grouping

The other proposal regarding the export of manufactured goods from LDCs is that some sort of regional preferential groupings among LDCs be established. This proposal is based on the same kind of arguments discussed previously for preferences in the markets of developed countries. An additional supporting argument is that regional groups of LDCs would allow members to economise on the use of currencies in short supply. Foreign exchange could be saved by substituting imports from each other for imports from developed countries.

There are, however, several difficulties in such a proposal particularly in the short-run. Firstly, LDCs as poor countries even in groups may be unable to sustain the large scale industrial giants. Moreover, as Myint says, "Much empirical research remains to be done to find out how important the economies of large scale production really are for the types of manufacturing industry which are set up in the underdeveloped countries."[20]

A second problem is that there is a remarkable similarity among LDCs in agricultural production, and the structure of their "infant industry", and it is likely that some countries have few or no industrial products they could produce at lower costs than the others. This makes it difficult to reach at agreement.

Thirdly, there may be more scope for efficient production even without regional groupings. There are other conditions besides large scale output, as for example efficient entrepreneurship, skilled labour, etc. A better combination of factors and improvement of existing factors may offer more than large scale benefits. Mying feels that the

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[19] Johnson ; pp 152.

[20] Mying : pp 19.

"capacity to improve efficiency and reduce costs in its export production is a prior condition for taking advantage of the scope for the economies of large-scale production" offered by regional preferences. A fourth problem, is the political differences among LDCs, which may result in a preferential system being impractical (e.g. Tanzania, and Uganda ; Malaysia and Singapore).

There are, however, in theory, advantages for small number of LDCs agreeing among themselves on strategies for the complementary development of specific industries. In terms of static efficiency a regional system will improve economic efficiency, but in dynamic terms such a system will contribute only if in fact costs are reduced.

UNCTAD—I and II

At UNCTAD I (1964) the important issues raised were (i) preferential access for exports of manufactures to development countries ; (ii) international commodity agreements ; (iii) preferential regional arrangemets among LDCs ; and (iv) compensatory schemes.

The LDCs had valid grounds for complaining that trade policies of developed countries and the system of regulating trade within the institutionel framework of GATT were biased against the exporting interests of LDCs. Against such a background, UNCTAD—I was a success in the sense that attention was focused on the "grievances of the developing countries in the field of international trade."

The main objective of UNCTAD II (1968) was to draw up a development policy for the second development decade and to produce a global development strategy. UNCTAD—II however was, as Johnson maintains, a "virtually unqualified failure."[23] Pincus sums up that "The North (i.e. developed countries) is perfectly willing to endorse the demands of LDCs for access with words, by resolution after resolution in GATT, UNCTAD and other U.N. economic forums, but it is not disposed to move on any significant scale from words to actions that hurt domestic producers."

Conclusion

In this discussion we considered some of the important issues on trade and LDCs. In broad terms, there exist two views—one is a free trade view ; that LDCs should reduce their existing network of controls on international trade, and pursue an "outward looking" and "export-led" policy. The other view—a protectionist view is represented by those who feel that the "infant industries" of the LDCs should be insulated from the pressure of the world market forces. The ideal solution may be the elimination of discriminatory protectionist barriers, so that free international trade will prevail. But while "protection" may not help LDCs nor do the trading policies of developed countries within the framework of GATT which has been "interpreted, implemented, amended or ignored by industrial countries in such was as to effectively discriminate against LDCs."

Budget at a Glance

(Rs. Cross)

	1973-74 Revised	1974-75 Budget		1973-74 Revised	1974-75 Budget
Revenue Receipts			Revenue Disbursements		
Tax Revenue	5,052	5,287	General Services	1301	1566
		+212*	Defence Services	1551	1680
Less—States'			Social and Community		
Share of Tax	1,174	1,172	Services	324	451
Revenue		+26*	Economic Services	660	604
Net—Centre's	3,878	4,115	Grants-in-aid to		
Tax Revenue		+186*	States etc.	1118	1107
Non—Tax			Total Revenue		
Revenue	1,224	1,340	Disbursements	4954	5408
Total—Centre's	5,102	5,[illegible]55	Revenue Surplus	+148	+47
Revenue		+186*			+186
Capital Receipts			Capital Disbursements		
Market Loans (Net)	472	498	General Services	21	25
External Loans			Defence Services	202	235
(Net)	470	552	Social and Community		
Loan Repayments	1385	1080	Services	42	64
Other Receipts	359	969	Economic Services	669	899
Total—Capital			Loans and Advances	2550	2234
Receipts	2686	3099	Total—Capital Dis-		
			bursements	3484	3457
			Deficit on Capital Account	—798	—358
					—311
			Overall Deficit	—650	+186*

Effect of Budget Proposals.

Urban Poverty in Varanasi

Rameshwari Saxena*

Growing urbanization in Varanasi has created certain serious problems, such as shortage of accommodations, crowded roads and streets, mixed and incompatible land uses, emergence of slums and poor public utilities, municipal services and community facilities.

There is a staggering shortage of adequate housing in urban areas of the district. The 1961 census provides a clear picture of the size of households and density of persons per room in the urban areas of the district. The average size of the household was 4.7 in 1951 which increased to 5.2 in 1961. Most of the households possess an accommodation of a single room ; 30.8 per cent of the households have one room ; 25.3 per cent have two rooms ; 15.4 per cent have three rooms ; 9.5 per cent have four rooms and 19.0 per cent live in four rooms and above. Nearly 0.2 percent of the households have no regular room to live in. The average density of persons per room is 2.1 according to 1961 census.

In Varanasi City, the average size of the family is about 4.91 persons and on the average 10.8 persons or 2.15 families live in one house. About 52 per cent of the families live in an accommodation of a single room and 38 per cent live in two rooms accommodation. About 19.0 per cent families of the city live in rooms with an area of a square metre and 78 per cent families in rooms with an area of 27 square metre. The statistics available from Statistical Office reveals that on the average, a family of 5 persons live in a room of 9.9 to 11.7 square metres.

This quantitative shortage of housing in Varanasi City is similar to that in many other cities of the country. Summing the results of a number of City surveys conducted by various universities on behalf of the Planning Commission, a prominent Indian sociologist writes,

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* The author takes it as a pleasure part of her duty to express her gratitude to Dr. R. M. Dubey for his valuable guidance in the preparation of the present paper.

"All the survey reports emphasise the patent fact that urban housing is lagging far behind urban immigration....Over-crowding is appalling as can be seen from the fact that 84 per cent of the residents and 77.00 per cent of the immigrant population in Gorakhpur have less than 50 square feet of space per person. In Hubli, 14.0 per cent of the total families with 7 and more members live in per room. In Jamshedpur, 35 per cent of the dwellings have nore than one family living in each. In Lucknow, 62 per cent of the dwellings have more than 4 per cent living in each. The same story is repeated for cities like Kanpur, Poona and Bombay."[1]

The qualitative deficiencies in housing in Varanasi City are also grave. The situation in terms of floor area, number of habitable rooms, occupancy rate, etc., correlated to the household size, materials and type of construction, age of dwellings, structural conditions, provision of piped water supply, sanitation, liveability, environment, maintenance and so forth, is most depressing in the city. About 80 per cent of the families do not have personal latrine facilities, 83 per cent of the families do not have bath rooms and 88 per cent of the families do not have kitchen. These families mainly depend on public pipes so for as their water requirement is concerned and use the varandah for kitchen purposes.

Thus, the deficit of housing from both the points of view, quantitative as well as qualitative, is almost unbelievable. This only underlines the fact that a standard,[2] which seems to be the minimum necessary and low enough to experts fully cognisant of the existing acute housing situation, appears as an unattainable mountain peak from the mud flats of the existing situation.

However, the housing deficiency is not uniform in the various constituents of Varanasi City and also in other urban centres of the district. Following table shows the over-all picture of the housing conditions in the various constituents of the city as well as in other urban centres of the district.

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1. J. F. Balsara, Problems of Rapid Urbanization in India, Bombay (1964), pp. 179-80.

2 "Independent baths and Wcs for each house are necessary in public housing, if minimum standards of cleanliness and low maintenance costs are to be ensured. A varandah or a balcony also seems necessary during the hot months of the year. If a small open private area can be given to each family, it would increase the comfort of the house without much additional cost." For full details see N. V. Sovani, Urhanization and Urban India, Asia Publishing House, Bombay. p. 32.

Table

Number of occupied residential houses, population and average density per house in the urban centres of Varanasi District—1961

Town-groups/towns	No. of occupied residential houses	Population	Average No. of persons per house
1) Varanasi, T.G.	51316	489864	9.5
a) Varanasi, M.C., B.H.U. and Rly. Colony	50523	485083	9.6
i) Varanasi, M.G.	48663	471258	9.7
ii) B.H.U.	692	6680	9.6
iii) Varanasi Rly. Colony	1168	7145	6.1
b) Varanasi Cantt.	793	4781	6.0
2) Mughalsarai, T.G.	4755	21086	4.6
a) Mughalsarai, M.B.	1741	10600	6.1
b) Northern Rly. Colony	3014	10486	3.5
3) Bhadohi. M.B.	3191	20302	6.4
4) Ramnagar, M.B.	2189	16088	7.3
5) Gopiganj, T.A.	966	5806	6.0

Source : Census of India, 1961.

As is evident from the table the housing congestion is more acute in Varanasi Municipal Corporation than other constituents of the town ; the average density per occupied house is 9.7 persons in Varanasi Cantt. In Banaras Hindu University though the percentage is sufficiently high yet the general conditions of houses are not so bad. Varanasi Railway Colony and Varanasi Cantt. are not so thickly populated and, therefore, the average density per house in these areas is less.

The average density of population per house is 4.6 persons in Mughalsarai Town-Group (6.1 persons in Mughalsarai, M.B. and 3.5 persons in Mughalsarai Railway Colony), 6.4 persons in Bhadohi ; 7 3 persons in Ramnagar and 6.0 persons in Gopiganj.

Housing deficit in Varanasi City results from the chronic overcrowding which has taken place in the city over a long period. As a result of the growth of industries and commerce, Varanasi has drawn a steam of immigrant labour from the neighbouring districts. It is progressively marching on towards industrialization owing to its various factories, heavy trade and silk goods and imports and exports. On this account the immigrant labour is already at a very high mark. The villagers from the surrounding rural areas have been attracted to the city, as they can earn more in the city compared to their incomes in the villages. This immigrant labour cannot afford to have houses of its own. Mills and factories that employ labourers provide nothing in the way of houses. The labourers have to arrange for their own houses. With the result, innumerable huts affecting the health and beauty of the surrounding areas have sprung up on the vacant lands.

Apart from the factor of industries and commerce, the city is very famous for its educational institutions. These institutions, naturally attract a great number of student population from all over the State and the country as a whole. The hostels, both private and Government, cannot provide accommodation for all, and some students have to look for rooms. Some of them for small houses where two or three of them can join together and run a mess. These arrangements, though proved to be quite economic, make the problem of housing more acute.

The religious atmosphere of the city and the old concept that all those who die in this holy city, get 'Moktch', draw visitors, old and retired people from various places. Most of them do not have their own houses. To provide them with housing accommodation adds an additional problem to the existing housing difficulties.

The growing concentration of population in the city of Varanasi has made the public transportation problem more complicated. The vast area of the city remains relatively unserved even in terms of adequate paving, let alone the provision of vehicle for mass public transportation. The problem is further complicated because automobile and truck-traffic form a relatively small proportion of the total traffic. There are many modes of transportation : trucks, bicycles, horses, donkeys, buses, rail-roads, pedestrians, motor-cycles, rickshaws, tongas, etc. These modes of transportation involve travel at greatly varied speeds and virtual disregard for channelization. The pedestrians carrying a heavy load on his back have to compete with the lurching overheaded bus that tries to get through the traffic by blowing its horn louder than the horn of the truck just behind it. The number of pedestrians using right-of-way is much greater in the city.

The table below provides an idea of traffic congestion in the city. It gives the traffic load per hour of cycle and rickshaws, load carriers, bullock-carts, trucks, buses, cars and ekkas and tongas on the main crossings of the city.[3]

As the table reveals, Varanasi is largely the city of cycles and cycle-rickshaws. The average number of cycles and cycle-rickshaws on certain points ranges from 1194 to 4900 per hour. As the cycles and rickshaws mainly serve the city proper, their importance as a means of transport decreases on the outer fringe. The number of cycles and cycle-rickshaws crossing over the Malviya Bridge is the lowest (1194) while the Vishehhwarganj (4900), Maidagin (4028), Godaulia (2610) and

Table

Average traffic load per hour on the important 15 crossings of Varanasi City—Dec. 1960

Name of crossings	Cycles and rick-shaws	Load carri-ers	Bullock carts	Trucks	Bus	Cars	Ekka and ton-gas.
I) Sonarpura	1644	87	19	10	33	64	24
2) Godaulia	2807	111	34	10	28	139	49
3) Godaulia Church crossing	2610	128	49	15	53	117	35
4) Lahurabir	2338	65	72	33	76	129	35
5) Lanka	2629	111	10	5	26	42	15
6) Bhelupura	1713	106	16	10	8	42	9
7) Octroi Post	3693	174	69	69	45	89	29
8) G. T. Road Crossing	3044	132	79	75	45	94	39
9) Maidagin	4028	334	94	9	50	89	51
10) Vishweshwarganj	4900	112	101	39	61	48	34
11) City Railway Station	1632	45	77	103	35	49	26
12) Malviya Bridge	1194	223	90	153	180	109	48
13) Andhra Pul	1360	67	31	43	47	117	20
14) North Baruna Bridge	2252	67	24	16	46	67	15
15) Pendeypur	1721	134	17	17	10	28	17

Source: Sample Survey—Traffic Survey of Varanasi, December, 1960, conducted by the Department of Geography, Banaras Hindu University.

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[3] For full details, see R. L. Singh and Ujagir Singh, "Road Traffic Survey of Varanasi," National Geographical Journal of India, September—December, 1963, pp. 139-60.

G. T. Road Crossing (3044) have a very heavy traffic in cycles and cycle-rickshaws.

The largest number of rickshaws and cycles run on the Rajghat-Maidagin-Varanasi Railway Station route and Godaulia-Collectorate Road serving the city proper. Godaulia to Lanka and Lahurabir to Varanasi Railway Station are the other important routes for such traffic.

The number of ekka and tonga on ther other hand have greatly dwindled on the roads of Varanasi. There are only three points where their number is comparatively large. Maidagin records the highest figure (51), while Godaulia and Malviya Bridge each records about 48.

As is obvious from the table a few automobiles are in use in the city. Largest number of automobiles (153 trucks, 130 buses, 109 cars) run over the Malviya Bridge, the only gateway to the east. The city Railway Station is another important point attracting machanised traffic. As it lies near the busiest centre of the city, trucks outnumber other types of vehicles, both buses (35) and cars (49) combined. The G. T. Road Crossing and Octroi Post Crossing, lying in the northern outer fringe, are other points where large number of trucks (75 and 67, respectively) pass. The lowest number of trucks run in the southern section of the city. At the Lanka Crossing, for example, only 5 trucks per hour have been recorded. On the Lanka-Godaulia Road, the number of trucks passing per hour is on an average between 16-17. Thus, truck is now frequently used as the means of transport in the north eastern part of the city.

Since the introduction of city-bus-service in the city, buses have been the important means of passenger's traffic on most of the main routes of the city ; its frequency being the highest over the Malviya Bridge (130) due to the fact that there is 24 hour bus service between Mughalsarai and Varanasi. The Lahurabir Crossing due to its location on the junction of Maidagin-Varanasi Railway Station Road and Godaulia-Collectorate Route, records the second largest bus traffic (76). The lowest figure (10) has been recorded at the Pandeypur Crossing, being one of the outer most crossings in the north of the city proper.

Cars and taxis are comparatively more popular means of transport in the city proper than on the outer skirts of the city. Here the Godaulia crossing surpasses any other point. The number of cars and taxis passing at this crossing averages 139 per hour. Next comes the Lahurabir Crossing, its number being 129. Andhrapul, the railway subway on Godaulia-Collectorate Route, occupies the third position, the number of cars and taxis passing here averages about 117. It is closely followed by the Malviya Bridge. Other important points in this connection are Maidagin, Octroi Post and G. T. Road Crossing; their average varying from 80 to 90.

Bullock-carts largely serve the grain market of Visheshwarganj and Maidagin areas, where the number averages over 90, closely followed by Lahurabir, G. T. Road Crossing and the City Railway Station. In the southern section of the city which is mostly residential, bullock-cart is not often used. Other forms of load carriers, both human and animal, show the same tendency as the bullock-carts.

There are three important points lying on the northern, southern and western peripheries, namely, Civil Court, the Banaras Hindu University, the Malviya Bridge and Kashi Railway Station which serve as traffic nodes. The Varanasi Station is another node of relatively minor importance in the west. The traffic to and from these nodes converges either at Godaulia or Maidagin; the latter being important especially for the traffic falling in the category of others (bullock-carts. ekka and tongas).

The most important routes for traffic flow are : (a) University-Assi-Sonardura-Godaulia, (b) Godaulia-Lahurabir-Civil Court, (c) Malviya Bridge/Kashi Station-Visheshwarganj-Lahurabir, further connecting the Varanasi Station, and (d) the Grand Trunk Road. The peripheral Varanasi-Sigra-Kamacha-Lanka Road is also significant. The different categories of traffic are rather selective in the choice of roads. Rickshaws and cycles predominate the Lanka-Godaulia, Godaulia-Lahurabir-Civil Court and Kashi Station-Lahurabir-Varanasi Station Road. Automobiles have marked preference for the Grand Trunk Road and the Godaulia-Lahurabir-Civil Court Road. Traffic under the category of others (bullock-carts, ekkas, tongas, load carriers) is concentrated on the Visheshwarganj-Maidagin and outlying roads leading to Sarnath and Mughalsarai. This feature of traffic indicates that the different kinds of traffic are associated with different functional areas of the city. The predominance of rickshaws and cycles traffic is found on the triangular road arms connecting Godaulia, Lahurabir and Maidagin, because there are the retail business areas, forming the central business of the district where every shop is accessible by these wheeled vehicles of highest flexibility. The wholesale area stretching from Visheswarganj to Lohatia is the focus of slow moving but heavy load carrying conveyances, classed 'others'. Automobiles are conspicuous along the Godaulia-Lahurabir-Civil Court Road which connects the main administrative zone to the C.B.D. between Varanasi Railway Station and Sigra which is the main industrial belt ; and along the circumferential G. T. Road which is the main artery of inter-city transport. The big blank patches mark residential areas where narrow lanes and alleys permit only pedestrians.

The narrow width and especially a sudden construction of width in particular localities create acute traffic problems which is further accentuated by the co-existance of different types of traffic and added by the carefree movement of the pedestrians. The introduction of new elements of traffic like city buses unaccompanied by a corresponding improvement in road width is also a factor contributing to traffic congestion. Because the inter-dependence of different functional areas on which depends the city's vitality is so much dependent upon a fine and smooth flow of traffic, the problems of traffic bottleneck need attract particular attention.

Growing urbanization of Varanasi has thus resulted in acute shortage of accommodation, extremely crowded traffic and poor public utility services. The old city is so congested that in several houses the sun-rays never reaches The condition of housing both in terms of quantity and quality does not satisfy even the minimum prescribed for the urban people.

The traffic congestion too is growing day by day and in the city the road blocked is quite common. On the roads of Varanasi, one can see a large number of cycles and cycle-rickshaws plying. Auto-rickshaw is hardly seen in the city. Of course, the Government buses run in the city. The three main routes of the city, viz., Rajghat-Maidagin-Varanasi Railway Station, Godaulia-Collectorate Road and Godaulia to Lanka, are relatively more heavily taxed with the traffic flow. At certain points of the city, such as, Visheshwarganj, Maidagin, Godaulia and G. T. Road, the passage is generally blocked by bullock-carts, cycles, and cycle-rickshaws and machanized means of transport-buses, cars, trucks, etc., have to wait or move at a snail's pace causing undue harrasment to the public.

(Continued from page 144)

$X_4 = 1$, if observations belong to the fourth quarter of a year

$= 0$, otherwise.

$X_5 = 1$, if observations belong to a sub-period with seasonal index showing peculiar pattern, say, character e.

$= 0$, if observations belong to a sub-period where character e is absent.

U_j=Stochastic term, j=1, 2, 3, 4 for Jth equation.

More variables, similar to X_5, would be used if more than one sub-period with character e_p (for p-th sub-period) could be specified. In general, the number of variables should be (p−1), if the number of sub-priods is p.

Section II (2) : The Estimation of the Models

The ordinary least squares (OLS) technique is chosen for estimating the functions of the models described in the previous sub-section. The usual assumptions of OLS are made in estimating these analytical models. The OLS technique involves the solution for parametes of normal equations. The usual computer programming would solve these normal equations in the first instance by investing the appropriate matrix with cross products of X's as its elements. The elements of this matrix have specific numerical values which depend on the numerical values of the variables specified in the function to be estimated. Since the models specify the regressors in such a way that they take values either 1 or 0, the elements of the matrix to be inverted can be generalised. However, a matrix with elements which are not assigned numerical values cannot be inverted by conventional computer programming. This inversion of the matrix is then to be done by manual operation, such as inversion from definition, inversion by Cramer's method, etc. In matrix notation, OLS estimates of the parameters are given as follows : $m=(X'X)^{-1}X'Y$, where m is a $k \times 1$ vector, X a matrix of order $n \times k$ and y a $n \times 1$ vector, n and k being sample size and number of explanatory variables including constant term. Here, the matrix to be inverted is $(X'X)$.

Consider the simple model first [Models I(a) and I(b)]. The solution for parameters (a_2's) of the normal equations for model

I(b), that is, with intercept term, is in matrix notation, as follows :

$$\begin{vmatrix} C_0 & C_1 & C_2 & C_3 \\ C_1 & C_1 & 0 & 0 \\ C_2 & 0 & C_2 & 0 \\ C_3 & 0 & 0 & C_3 \end{vmatrix}^{-1} \begin{vmatrix} \Sigma YX_0 \\ \Sigma YX_1 \\ \Sigma YX_2 \\ \Sigma YX_3 \end{vmatrix} = A_1^{-1}X'Y$$

Where $C_0=\Sigma X_0$, $C_1=\Sigma X_1=\Sigma X_1^2$, $C_2=\Sigma X_2=\Sigma X_2^2$, $C_3=\Sigma X_3$

Here, the task of inverting the matrix A, that is, the matrix of the cross-products of the variables X's is by far the most arduous burden of computation for solving the normal equations. The matrix A has elements whose values depend on specification of the X's for a particular sample period. If the specification of the X's remain unchanged, still the elements of A depend on sample size. These elements, being the sum of cross-products of the variables X's, are asertained very easily, howsoever the sample varies. Once, A is inverted with these "qualitative" elements (elements are qualitative, if their values are potentially numerical), it is a matter of assigning numerical values to these elements that the model can be analysed for various samples. If the matrix A had elements with numerical values to start with, the matrix A would have to be inverted each time when a new sample would be considered, although the specification of X's remain the same, since the numerical values of the elements of matrix A are unlikely to be the same from one sample to another. Whether the matrix A, with elements having numerical values to start with is inverted manually or by conventional computer programming, it incurs wastage of time and energy, if experiments are to be done for various samples. With the same specification of X's *the inverted matrix* can be used for any sample differing in countries *and in the dependent variables. The dependent* variable may be money *supply, price level, sales, labour productivity* and what not ? The countries may be India, Ghana, U.K, or any other country, any country whether economically developed or underdeveloped. Yet, the matrix to be inverted is (X'X) which remains unchanged for all these varying samples.

The matrix A_1 has its inverse as follows

$$A_1^{-1} = \left| \begin{array}{cccc} \frac{1}{f} & -\frac{1}{f} & -\frac{1}{f} & -\frac{1}{f} \\ -\frac{1}{f} & \frac{f+C_1}{C_1 f} & \frac{1}{f} & \frac{1}{f} \\ -\frac{1}{f} & \frac{1}{f} & \frac{f+C_2}{C_2 f} & \frac{1}{f} \\ -\frac{1}{f} & \frac{1}{f} & \frac{1}{f} & \frac{f+C_3}{C_3 f} \end{array} \right|$$

Where $f=C_0-C_1-C_2-C_3$

It is only a matter of feeding numerical values of the variables C_0, C_1, C_2 and C_3 into this 'general' matrix, and the least squares estimates can be easily obtained for different samples. This 'general' matrix, as also the others as given below, should be handy to research workers.

For model I(a), that is, the simple model where no intecept term is used, the least squares estimates are

$$\begin{array}{c} a_1 \\ a_2 \\ a_3 \\ a_4 \end{array} = \left| \begin{array}{cccc} C_1 & 0 & 0 & 0 \\ 0 & C_2 & 0 & 0 \\ 0 & 0 & C_3 & 0 \\ 0 & 0 & 0 & C_3 \end{array} \right|^{-1} \begin{array}{c} \Sigma YX_1 \\ \Sigma YX_2 \\ \Sigma YX_3 \\ \Sigma YX_4 \end{array} = A_2^{-2} X'Y$$

Where $C_1=\Sigma X_1^2$, $C_2=\Sigma X_2^2$, $C_3=\Sigma X_3^2$, $C_4=\Sigma X_4^2$.

The inverse of A_2 is easily obtained, since it is a diagonal matrix :

$$A_2^{-1} = \left| \begin{array}{cccc} \frac{1}{C_1} & 0 & 0 & 0 \\ 0 & \frac{1}{C_2} & 0 & 0 \\ 0 & 0 & \frac{1}{C_3} & 0 \\ 0 & 0 & 0 & \frac{1}{C_4} \end{array} \right|$$

Consider the interaction models, II(a) and II(b), which are to be estimated by OLS technique. The solution for parameters (a_i's) of normal equations is as follows giving least squares estimates for Model II(a), where no intercept term is used :

$$C_1=\Sigma X_1^2,\ C_2=\Sigma X_2^2,\ C_3=\Sigma X_3^2,\ C_4=\Sigma X_4^2,$$

$$g_1=\Sigma X_2(X_1X_5)\ g_2=\Sigma X_2(X_2X_5),\ g_3=\Sigma X_3(X_3X_5),\ g_4=\Sigma X_4(X_4X_5).$$

$$\begin{array}{c} a_1 \\ a_2 \\ a_3 \\ a_4 \\ a_5 \\ a_6 \\ a_7 \\ a_8 \end{array} = \left|\begin{array}{cccccccc} C_1 & 0 & 0 & 0 & g_1 & 0 & 0 & 0 \\ 0 & C_1 & 0 & 0 & 0 & g_2 & 0 & 0 \\ 0 & 0 & C_3 & 0 & 0 & 0 & g_3 & 0 \\ 0 & 0 & 0 & C_4 & 0 & 0 & 0 & g_4 \\ g_1 & 0 & 0 & 0 & g_1 & 0 & 0 & 0 \\ 0 & g_2 & 0 & 0 & 0 & g_2 & 0 & 0 \\ 0 & 0 & g_3 & 0 & 0 & 0 & g_3 & 0 \\ 0 & 0 & 0 & g_4 & 0 & 0 & 0 & g_4 \end{array}\right|^{-1} \left|\begin{array}{c} \Sigma YX_1 \\ \Sigma YX_2 \\ \Sigma YX_3 \\ \Sigma YX_4 \\ \Sigma YX_1X_5 \\ \Sigma YX_2X_5 \\ \Sigma YX_3X_5 \\ \Sigma YX_4X_5 \end{array}\right| = B_1X'Y$$

The inversion of matrix B_1 can be obtained more easily, if it is considered as a partitioned matrix as follows :

$$B_1 = \left[\begin{array}{cccc|cccc} C_1 & 0 & 0 & 0 & g_1 & 0 & 0 & 0 \\ 0 & C_2 & 0 & 0 & 0 & g_2 & 0 & 0 \\ 0 & 0 & C_3 & 0 & 0 & 0 & g_3 & 0 \\ 0 & 0 & 0 & C_4 & 0 & 0 & 0 & g_4 \\ \hline g_1 & 0 & 0 & 0 & g_1 & 0 & 0 & 0 \\ 0 & g_2 & 0 & 0 & 0 & g_2 & 0 & 0 \\ 0 & 0 & g_3 & 0 & 0 & 0 & g_3 & 0 \\ 0 & 0 & 0 & g_4 & 0 & 0 & 0 & g_4 \end{array}\right] = \left|\begin{array}{cc} J & K \\ L & M \end{array}\right|$$

$$\text{Where } J = \left|\begin{array}{cccc} C_1 & 0 & 0 & 0 \\ 0 & C_2 & 0 & 0 \\ 0 & 0 & C_3 & 0 \\ 0 & 0 & 0 & C_4 \end{array}\right| \text{; etc.}$$

Each of these sub-matrices, J, K, L and M is a diagonal matrix. The inverse of B is defined in terms of these sub-matrices as follows :

$$
B_1^{-1}: \quad \begin{array}{ll}
J^{-1}(I+KD^{-1}LJ^{-1}) & -J^{-1}KD^{-1} \\
-D^{-1}LJ^{-1} & D^{-1}
\end{array}
$$

Where $D=M-LJ^{-1}K$.

The result is :

$$
B_1^{-1}= \left|\begin{array}{cccc:cccc}
\frac{1}{h_1} & 0 & 0 & 0 & -\frac{1}{h_1} & 0 & 0 & 0 \\
0 & & 0 & 0 & 0 & -\frac{1}{h_2} & 0 & 0 \\
0 & 0 & \frac{1}{h_3} & 0 & 0 & 0 & -\frac{1}{h_3} & 0 \\
0 & 0 & 0 & \frac{1}{h_4} & 0 & 0 & 0 & -\frac{1}{h_4} \\
\hdashline
-\frac{1}{h_1} & 0 & 0 & 0 & \frac{C_1}{g_1h_1} & 0 & 0 & 0 \\
0 & -\frac{1}{h_2} & 0 & 0 & 0 & \frac{C_2}{g_2h_2} & 0 & 0 \\
0 & 0 & -\frac{1}{h_3} & 0 & 0 & 0 & \frac{C_3}{g_2h_2} & 0 \\
0 & 0 & 0 & -\frac{1}{h_4} & 0 & 0 & 0 & \frac{C_4}{g_4h_4}
\end{array}\right.
$$

Where $h_1=c_1-g_1$, $h_2=c_2-g_2$, $h_3=c_3-g_3$, $h_4=c_4-g_4$. The partitioning of the inverted matrix is indicated by broken lines. The correctness of the inversion should be checked thus :

$B_1\ B_1^{-1}=I$, where I is unit matrix of appropriate order, i.e, 8×8 order in this case.

The least squares estimates of parameters (a_1's) of Model II(b), where intercept terms a_0 and a_4 are included in the specification, are similarly obtained as under.

The same method as used to invert matrix B_1 in the model II(a) should, of course, be used for the inversion of matrix B_2. However, unlike matrix B_1, the matrix B_2 has one bordering row and column which broder the matrix B_1. The inversion of matrix B_2 is much more laborious, as the reader can testify by trying their hands at it. Perhaps it is more convenient to do this task by assigning numerical values to the elements and then to attempt an inversion of this matrix B_2.

$$\begin{array}{l} a_0 \\ a_1 \\ a_2 \\ \\ \\ a_5 \\ \\ a_7 \end{array} = \begin{array}{cccccccc} C_0 & C_1 & C_2 & C_3 & g_0 & g_1 & g_2 & g_3 \\ C_1 & C_1 & 0 & 0 & g_1 & g_1 & 0 & 0 \\ C_2 & 0 & C_2 & 0 & g_2 & 0 & g_2 & 0 \\ C_3 & 0 & 0 & C_3 & g_3 & 0 & 0 & g_3 \\ g_1 & g_1 & g_2 & g_3 & g_0 & g_1 & g_2 & g_3 \\ & g_1 & 0 & 0 & g_1 & g_1 & 0 & 0 \\ & 0 & g_2 & 0 & g_2 & 0 & g_2 & 0 \\ & 0 & 0 & g_3 & g_3 & 0 & 0 & g_3 \end{array} \left| \begin{array}{l} \Sigma YX_0 \\ \Sigma YX_1 \\ \Sigma YX_2 \\ \Sigma YX_3 \\ \Sigma YX_0X_5 \\ \Sigma YX_1X_5 \\ \Sigma XY_2Y_5 \\ \Sigma YX_3X_5 \end{array} \right| = B_2^{-1}X'Y$$

Where $C_0 = \Sigma X_0$: $C_1 = \Sigma X_0X_1 = \Sigma X_1^2$; $C_2 = \Sigma X_0X_2 = \Sigma X_2^2$; $C_3 = \Sigma X_0X_3 = \Sigma X_3^2$; $g_0 = \Sigma X_0X_5$; $g_1 = \Sigma X_1X_5 = \Sigma(X_1X_5)^2$; $g_2 = xX_2X_5 = \Sigma(X_2X_5)^2$; $g_3 = \Sigma X_3X_5 = \Sigma(X_3X_5)^2$

Section III : Regression Results

In this section a brief discussion on the results of the regression equations, as it would be as if some numerical example was taken, is given. For the usual analysis of the results, statistical testing, and interpretation of these results, refer to readers Ghosh, 6(a). Here, only peculiarites of the results will be pointed out.

The estimates of the dependent variable (say, money supply in Ghana) for different quarters of a year can be obtained in the following way :

For the first quarter, Q_1 : [from model II(6)]

a) for the sub-period with character e :
put $x_1 = x_5 = 1$ and $x_2 = x_3 = 0$; $x_0 = 1$, always.

Thus : $Y_{Q_1,e_p} = a_0 + a_1 + a_4 + a_5$.........(5)

b) for the sub-period where character e is absent :
put $x_1 = 1$, $x_5 = 0$, $x_2 = x_3 = 0$; $x_0 = 1$, always.

Thus, $Y_{Q_1,e_p} = a_0 + a_1$.........(6)

Estimates of the dependent variable for the 4th quarter are :

For the fourth quarter, Q_4

a) for the sub-period with chracter e :

put $x_1=x_2=x_3=0$; $x_0=1$, always ; $x_5=1$.

Thus, $Y_{q_4,e_p}=a_0+a_4$.........(7)

b) for the sub-period with character e absent :

put $x_1=x_2=x_3=0$, $x_5=0$; $x_0=1$, always.

Thus, $Y_{Q_4,e_p}=a_0$.........(8)

Compare (5) and (7) :

(5) minus $(7)=(a_0+a_1+a_4+a_5)-(a_0+a_4)$

$=a_1+a_5$............(9)

(9) is the "differntial" for the first quarter as compared to the fourth quarter. This is for the sub-period with character e. The "differential" for the sub-period without character e is obtained by comparing (6) and (8), thus :

(6) minus $(8)=(a_0+a_1)-a_0=a_1$.........(10)

Similarly, for other quarters. Model II(a), that is, without intercept term, does not give this "differential" ; however, the "differential" for a quarter as compared with the fourth quarter can be found by obtaining the difference between the estimates for these two quarters. The statistical significance test for these "differentials" can be performed easily with Model II(b), since this is given by the programing whereas, that for Model II(a) is not automatic, for, now, variances of differences are to be found for Model II(a). Thus, Model II(b) imparts more information and facilities than Model II(a).

The data used in estimating the economic models as enumerated in the previous section are time series and for time intervals essentially less than a year. One serious difficulty with time series data is the inherent problem of successive correlation between the errors, u_{jt}. This is autocorrelation. If trend free data are used, at least one source of autocorrelation is avoided. See Ghosh, 6(b). The shortening of time intervals for observations aggravates the situation. So, it is quite usual that with quarterly, or monthly or shorter period data, the problem of autocorrelation is quite serious. Trend-free data would be less problematic. With autocorrelation in u_j, the economic model cannot be well estimated by OLS. More sophisticated methods of estimation are to be used.

(Continued)

Central Budget 1974-75

[Excerpts from the Speech delivered by the Minister of Finance on 28th February, 1974]

The principal concern of every Central budget has to be to strike a proper balance between the requirements of accelerated growth, stability, greater social justice and self-reliance. In the long run, these objectives are self-reinforcing. In the short run, however, a reconciliation of these objectives is not an easy task even under favourable conditions. I would like to state frankly that in the coming financial year the economy will be faced with even greater challenges. Its strength and adaptability will be severely tested. The steep rise in the price of crude oil and also some other commodities has turned the terms of trade sharply against us and has rendered our tasks exceptionally difficult.

The State of the Economy

The House will appreciate that the pressure on prices was inevitable as a result of the unsatisfactory performance in the field of agricultural production in two successive years, 1971-72 and 1972-73. The steep fall of 9.5 per cent in agricultural output in 1972-73 was bound to upset the delicate balance between demand and supply. Because of a much sharper increase in international prices, the substantial imports of foodgrains that we arranged were also unable to exercise a stabilising influence on domestic price. Even with a more normal kharif crop in 1973, the pressure on prices has not abated in view of other inflationary forces at work in the economy. It appears certain that the national income in 1973-74 will record a significant growth ; this will help to neutralise the unsatisfactory behaviour of national income in the two previous years. It is, however, a matter of deep concern to us that in the Fourth Plan our overall rate of growth has been much lower than the Plan target. It is also a matter of deep regret that the upsurge in industrial production that was evident in 1972 was not sustained in 1973. The available indicators suggest that

(Continued on page 185)

Railway Budget 1974-75

[Extracts from the speech of the Railway Minister delivered on February 27, 1974].

I shall first review the results of the last financial year i.e. 1972-73. Large scale power shedding, mulki rule agitation in Andhra Pradesh, strike by engineers of U.P. State Electricity Board and other disturbances adversely affected the working of major industrial units and the general state of national economy. Against this background, when I presented the Revised Estimates for that year to the House, I had to scale down the originally estimated surplus Rs. 32.53 crores to Rs. 12.40 crores. I was still optimistic that despite a shortfall in the originating traffic, the situation would be somewhat retrieved by the increase in the lead, emerging improvement in economic activity and the favourable change in the overall traffic mix. This hope has, however, not been fulfilled and the actual surplus for that year has turned out to be only Rs. 2.92 crores. This was mainly because of the gross traffic receipts not reaching the anticipated level. Actual gross traffic receipts for that year came to Rs. 1162.42 crores against Rs 1174 crores assessed in the Revised Estimates.

Our estimate of Working Expenses was practically exact, as the actuals came to Rs. 982.62 crores against the revised estimate of Rs. 982.68 crores. The appropriation from Revenue to the Depreciation Reserve Fund was maintained at Rs 110 crores and to the Pension Fund at Rs. 16 crores. The amount of Rs. 161.51 crores was paid as dividend to the General Revenues on the Capital-at-Charge of the Railways.

The indebtedness of the Railways to General Revenues under Development Fund and Revenue Reserve Fund, which was estimated at the Revised Estimate stage to go up to Rs. 110 67 crores at the end of 1972-73, actually came down to Rs. 85.65 crores because of adjustment of arrear relief in dividend payment for the years 1969-70 and 1970-71 recommended by the Railway Convention Committee, 1971.

The Budget Estimates for 1973-74, as approved by Parliament, envisaged a surplus of Rs. 23 86 crores. The working results of the Railways during the year have, however, undergone a sea-change due to the confluence of three vital factors which have simultaneously affected their financial position. These factors are: the state of national ecocomy, the deterioration in staff discipline and the impact of Pay Commission's recommendations as accepted and liberalised by Government. Industrial production, which had recorded a significant rise in 1972, stagnated during 1973 due to a variety of factors like short supply of steel, coal and cement. Production was also adversely affected by extensive load shedding and power cuts due to depletion of hydel reservoirs. Disturbed industrial relations in a number of industries and strikes in the Railways, also had an adverse effect. Consequenly, the offering of traffic itself to the Railways was at a substantially lower level than what was anticipated.

So far as staff discipline is concerned, this has been a particularly bad year for the Indian Railways. From the very beginning we have been hit by go-slow, work-to-rule and work-to-designation agitations, mass absenteeism, wild-cat strikes, bandhs, squatting on track, etc. While the agitations unconnected with railway operation impeded our working, the effect of employees' agitations has been particularly crippling. Among such agitations are the lightning strike of station masters and assistant station masters during April on Western Railway, the successive strikes and agitations by loco running staff in May, July-August and December which affected most of the Zonal Railways and the agitation by staff of Sholapur Division on the South Central Railway during August and September. The work-to-rule agitation by staff of Signal and Tele-communication Department during November and December 1973 also took its toll. Subsequently, an agitation by the Carriage & Wagon staff considerably affected transport operations. As a matter of fact, not a month has passed on the Railways this year during which train operations were not held up or hampered in one part or the other of the country by such agitations sponsored by certain unrecognised category-wise associations. Consequently, both the financial and operational targets have been upset. Earnings up to the end of December, 1973 fell short of expectations by Rs. 81.50 crores. To make matters worse, the average lead of traffic during the current year has also decreased by 2.4% over that of the last year. The losses in the quantum and lead of traffic are irretrievable as even at the turn of the year signs of return to normalcy are not visible.

The implementation of the recommendations of Pay Commission, as modified by the Government, and the grant of three increases in dearness allowance during the year have substantially added to our expenditure ; its impact is over Rs. 109 crores for a full year. We have taken vigorous measures to disburse pay and allowances at the enhanced rates to as large a number of staff as possible. It may, however, not be possible to disburse payments for the entire period. I may point out that implementation of the Pay Commission's recommendations involves obtaining of options from a million and a half railway employees, re-fixation of their pay in the revised scales and drawal of pay bills for the net amounts payable to them. Since these processes were to take some time, the Government took a deliberate decision to pay during the current year an ad hoc amount of Rs. 150 to each Class II and III employee and Rs. 100 to each Class IV employee who may not be paid his full arrears of pay and allowances before the close of the financial year.

Due to the combination and conjunction of heavy additional expenditure and substantially short earnings, the year 1973-74 has been the worst year for railway finances for many decades. Recognising the gravity of the situation, we devised and imposed during tha year 'exchequer control' on all spending units to regulate their cash disbursement against the budget allotment. In addition, various economy measures were intensified which have yielded appreciable results. Consequently, Revised Estimates of working expenses have been fixed at only Rs. 953 crores or Rs. 34.77 crores more than the original budget. Considering that the provision for disbursement of pay and allowances arising out of the Pay Commission's recommendations, as modified by Government, during the current year is Rs. 52 crores, an amount of nearly Rs. 17 crores has thus been absorbed in working expenses through various economy measures. The appropriations to the Depreciations Reserve Fund of Rs. 115 crores and to the Pension Fund of Rs. 16 crores have been maintained as in the Original Budget Estimates. The dividend liability to General Revenues is expected, on latest calculations, to be Rs. 168.60 crores against the budget estimate of Rs. 172.61 crores.

In short, with a drop in earnings of Rs. 93.20 crores and an unavoidable increase in expenditure of Rs. 34.77 crores together with a reduction of Rs. 4.36 crores in miscellaneous transactions and the amount of dividend payable to General Revenues, the budget surplus of Rs. 23.86 crores has turned into a deficit of Rs. 99.75 crores. This amount is proposed to be covered by obtaining a loan from the General Revenues. A further loan of Rs. 22.65 crores will also have to be taken from the General Revenues to meet the requirements of

Development Fund expenditure and interest liabilities on outstanding loans. The indebtedness of the Railways to the General Revenues, which was anticipated at Rs. 111.01 crores, would, in the circumstances, rise to Rs. 208.02 crores.

The Fifth Five Year Plan of the Indian Railways, both in physical and in financial terms, has been finalised after prolonged discussions and in consultation with the Planning Commission and other Economic Ministries. It envisages an outly of Rs. 2350 crores for a target of 300 million tonnes of originating freight traffic by the end of the Fifth Plan Period. This figure is about 50% more than the existing level of freight traffic handled by the Railways. In respect of passenger traffic, the Plan foresees an annual growth rate of 4 per cent in passenger kilometres for non-suburban traffic and 5 per cent for suburban traffic. Actually the growth rate in the suburban areas would vary from 3 per cent in Calcutta area to 6% in Bombay area. The Railways have, therefore, to gear themselves for this gigantic task. To meet this challenge some preparatory action has been initiated during the current year itself to increase line capacity and production of rolling stock.

While the oil crisis affects many sectors of the economy, its impact on Railways is two-fold. First, it has resulted in increased demand for coal, which is expected to reach a production level of 90 to 95 million tonnes in 1974-75 against about 79 million tonnes during the current year. Transport capacity to match this substantial increase in the originating traffic of coal will require detailed planning of linkages and necessitate the optimum utilisation of existing assets as well as setting up of additional facilities. In co-ordination with the Department of Mines, we are taking requisite steps to meet the challenge. Secondly, it has re-activated interest in steam traction as a possible alternative to dieselisation. A quick economic study has thrown up the conclusion that while it is not advisable to re-start the production of steam locomotives, the service life of the existing steam fleet could be prolonged by improved maintenance and rehabilitation. Accordingly, it has been decided not to condemn and abandon old steam locomotives for the present.

The Railway Convention Committee, 1971, presented its final report in April, 1973 which was accepted by the House. The total relief in dividend payment to General Revenues which the Railways have obtained as a result of their recommendations covering the Fourth Plan as a whole was about Rs. 107 crores. Their recommendations are being pursued energetically and action taken thereon is being reported through the Railway Convention Committee, 1973. Pending examination in depth of the matter remitted to this Committee, which was consituted in May, 1973, an interim report has been presented by them and the recommendations contained therein have been included in the Budget for 1974-75. The various reliefs given by the earlier Committee have been extended by the present Committee to the Budget year 1974-75 wherein their is about Rs. 23.82 crores.

The total foreign exchange requirement of the Railways for the Fifth Five Year Plan is estimated at about Rs. 330 crores. This requirement covers import of essential raw materials and components for manufacture of rolling stock and of other equipment for improvement and modernisation of the Railway system.

Budget Estimates 1974-75

Arising out of poor financial performance in the current year, we have to provide Rs. 44.76 crores in the Budget Estimates for the next year towards repayment of indebtedness, including interest charges to the General Revenues. In addition, we also have to carry Rs. 42 crores which is a throwforward liability of Pay Commission's recommendations and the increase in dearness allowance. The year 1974-75 will, therefore, have to bear the dead-weight of these heavy burdens in addition to concurrent expenses. We have estimated our gross traffic receipts, at the existing level of fare and freight rates, to be Rs. 1290.77 crores based on the hopeful assumption that the Railways will carry 25 million tonnes of additional originating traffic over that expected during the current year.

Our working expenses have been placed at Rs. 1148.37 crores which include Rs. 99 crores for payment of increase in wages and allowances arising out of Pay Commission's recommendations together with additional dearness allowance. There is also a provision for additional expenditure (Rs. 29.29 crores) for carrying out repairs to railway assets including permanent-way, rolling stock, equipment etc. The estimates also provide for an increase in the fuel bill of the Railways consequent on the haulage of the projected additional traffic of 25 million tonnes as well as for the higher cost of fuel (Rs. 40.78 crores). We have also provided for an appropriation of Rs. 115 crores to Depreciation Reserve Fund and Rs. 16 crores to Pension Fund. The rate of contribution to Depreciation Reserve Fund during the budget year has been maintained at the same level as that during

1973-74, on the recommendation of the Railway Convention Committee, 1973 accepted by the Parliament. The Accident Compensation, Safety & Passenger Amenities Fund created from 1-4-1974 will be credited with the entire proceeds estimated at Rs. 8 crores on account of the surcharge on passenger traffic levied under the Indian Railway Amendment Act, 1973.

Talking all these and other relevant items into account, our revenue will fall short of our expenses by Rs. 7.5 crores. But for the throwforward liability from last year of Rs. 42 crores on account of the recomendations the Pay Commission, revenue receipts would have exceeded the expenses including appropriations to Depreciation Reserve Fund and to Pension Fund, by Rs. 34.5 crores.

From these forecasts it will be seen that the Railways will not be able to meet the dividend liability, the requirement of debt-service charges and the expenditure on works debitable to Development Fund. Aggregate liability on this account amounts to Rs. 252.43 crores.

Budget Proposals

The cost of inputs, particularly wages bill, which constitutes 60% of the total working expenses and fuel which accounts for nearly 20% as also the cost of other materials and stores, have risen to such levels recently as to upset fundamentally the value of constituents in our freight rates and fares. Further, cost studies which generally form the basis for freight structure show that the gap between costs and income particularly in respect of major commodities moving in bulk, which form nearly 75 per cent of our cargo, is becoming wider and wider. While on one hand our average lead for haulage of goods has been growing longer over the years, the distance for the break-even point has fallen steeply during the current year. The taper in the telescopic rates i.e. per tonne per kilometre charge decreases or tapers off with the increasing distances and this taper has become very much more acute than the cost taper. The loss in the transport of low-rated freight trafhc according to the latest assessment will rise to Rs. 115.40 crores in 1973-74. To remedy this trend it has become necessary not only to effect a suitable escalation in the freight rates but also to adjust the taper for rates applicable for longer hauls. It is, therefore, proposed to revise the freight structure without disturbing the inter-se classification of goods. As at present, the rates for any commodity will be derived from a basic scale. The range of the increases in the revised structure compared to existing levels of freight will be from about 5% at a lead of 40 kms. to approximately 11 per cent at a distance of 3000 kms. Coal is at present treated as an exception in that it is outside ihe scope of the standard freight structure, with the result that, at the current concessional rate, Railways would suffer a loss of approximately Rs. 37.67 crores in carrying coal during 1974-75. It is now proposed to bring the freight rate for coal in alignment with the current cost by fitting it at class 37.5 in the standard freight structure. This would enable the Railways to neutralise the loss in the transport of coal. The increase in the incidence of freight on the price of coal will be only about 5 to 6 per cent for an average consumer at a lead of 760 kms. For shorter distances, the impact will be even less. It is estimated that the proposed changes in the general tarific and the application of appropriate standard schedule to coal will bring an additional revenue per annum of Rs. 39.33 crores in respect of coal and Rs. 44.89 crores in respect of other commodities.

Transhipment charges which were last revised in 1970 also require to be modified in view of the increasing costs at transhipment points. The present rates of charges which vary from 10 paise to 20 paise per quintal depending upon the nature of the commodity, will be increased from a minimum of 25 paise to a maximum of 50 paise per quintal. The transhipment charges for coal will likewise be raised from 60 paise per tonne to Rs. 1.53 per tonne. The new rates are expected to yield an extra revenue of Rs. 4 crores per annum.

As regards Percels and luggage, at present a supplementary charge of 5% is being levied. It is proposed to increase the supplementary charge from 5 per cent to 15 per cent, except in the case of transport of fruits, vegetables and milk which will be exempted altogether from the levy of the proposed additional supplementary charge. The revision is expected to get the railways an additional revenue of Rs. 5.5 crores per annum.

In respect of travel by Air-conditioned Chair car and First Class, I propose an increase, inclusive of the surcharge recently imposed, ranging from a minimum of Rs. 2 to a maximum of Rs. 16 per ticket. As regards Air-conditioned First Class fares, I had already indicated my intention in my last Budget Speech that the fares would be brought closer to the corresponding air fares and accordingly I propose an increase per ticket ranging from Rs. 15 to Rs. 160 depending upon the distance. Similar increases are proposed in the case of travel by the two Rajdhani Expresses for the air-conditioned First Class; the existing fare of Rs. 379 per ticket between New Delhi and Howrah will be increased to Rs. 520. Similarly, in case of travel between New Delhi and Bombay Central, the fare will be revised from Rs. 349 to Rs. 465 per ticket. As regards A.C. Chair car available by these trains, suitable revision will be made, the increases being somewhat higher than the corresponding increases in the Chair car fares by the Deluxe trains. The additional revenue from increased fares of upper classes is expected to be Rs. 4.44 crores in a year. In order to alleviate the heavy overcrowding and inconvenience to long distance passengers, it is proposed to revise the very low fares by Mail and Express trains up to 50 kms., raising the minimum fare from 25 paise to 50 paise for travel by these trains. From 50 kms. onwards the increase in fares per ticket will be 50 paise and will gradually increase with the distance travelled, the maximum increase per ticket being Rs. 8 for distances beyond 3000 kms. The estimated additional yield will be Rs. 18.06 crores per annum. Coming to Third Class ordinary passengers, I am proposing comparatively a very modest increase of only 5 paise up to a distance of 25 kms and 10 paise between 26 and 49 kms ; the increase will then range from 25 paise per ticket to a maximum of Re. 1 per ticket depending upon the distance. In other words, for no distance the new fare will be more than Re. 1 per ticket over the existing fares. The extra collection from Third Class ordinary passengers will be Rs. 16.48 crores.

Reservation charges are being increased from the present 50 paise to Re. 1 in the case of A.C. Chair car, from Re. 1 to Rs. 2 in the case os First Class and from Re. 1 to Rs. 5 in the case of Air-conditioned class. I do not propose to make any increase in respect of reservation charges for Third Class travel. It is, however, proposed to revise the existing sleeper charge for Third Class travel in three-tier coaches from Rs. 4 for the first night to Rs. 5 for the first night and for every subsequent night from Rs. 1 to Re. 3. Similarly, for travel in two-tier, the charges will be increased from Rs. 4 to Rs. 5 per night. It is also proposed to increase the cost of the platform ticket from 25 paise to 50 paise per ticket with a view to curb flocking of visitors to station platforms. The proposals in regard to these miscellaneous charges are expected to fetch an additional sum of Rs. 3.68 crores per annum.

All these measures which will be effective from 1-4-1974 will bring in a total additional revenue of Rs. 136.38 crores during 1974-75. This will leave an uncovered gap of Rs. 52.79 crores in the payment of dividend to the General Revenues.

(Continued from page 176)

there was hardly any increase in the rate of growth of industrial production in 1973.

In order to supplement domestic supplies, Government imported significant quantites of foodgrains and vegetable oil from abroad during 1973-74. Fortunately, our exports have grown at a satisfactory rate and, as a result, the deterioration in our balance of payments has been contained within manageable proportions. However, it is no use minimising the likely adverse effect on our balance of payments which will inevitably arise as a result of the prices of crude oil and of commodities like fertilizer and non-ferrous metals. The oil crisis, while no doubt adding to our difficulties, has already created new export opportunities in respect of products such as jute textiles, cotton textiles and leather goods.

Revised Estimates 1973-74

The budget estimates for 1973-74 had envisaged a deficit of Rs. 87 crores. This excluded provision for expenditure arising out of the recommendation of the Third Pay Commission, since the Commission's report was not available at the time of formulation of the budget proposals. It was anticipated that the acceptance of these recommendations would raise the budget deficit to a level substantially higher than Rs. 87 crores. However, subsequent events, largely an out-growth of the steep fall in agricultural output in 1972-73, have led to a much greater deterioration in the budgetary position than was originally anticipated.

Extensive drought relief operations, started on account of the widespread and unprecedented drought in 1972-73, had to be continued to a large extent in 1973-74 also. At the peak of these operations 1,43,740 relief works were opened over the entire country, and 93 lakhs of people were employed. It was hoped that with the onset of the monsoon in 1973-74, and increasing involvement of the labour force in agricultural operations, the number of people employed on relief works would diminish appreciably. Unfortunately this did not happen. Consequently the Central Government had to continue massive assistance to State Governments on this account. A sum of Rs. 100 crores was provided in the current year's budget for this purpose. This provision proved to be wholly inadequate and had to be stepped up by another Rs. 220 crores.

Apart from larger assistance provided to State Governments for expenditure on natural calamities relief, provision for special assistance to States to meet gaps in their resources, and for specified projects, had also to be increased. The budget provided an amount of Rs. 198 crores for this purpose, and this will have to be stepped up by nearly Rs. 91 crores. The expenditure on food subsidy will be higher than the provision of Rs. 130 crores by Rs. 121 crores despite some revision in the issue prices of foodgrains. This is essentially due to the high cost of imported foodgrains.

The four instalments of dearness allowance we have sanctioned will cost the exchequer nearly Rs. 100 crores. The impact of the recommendations of the Third Pay Commission was estimated at Rs. 150 crores. We have in fact agreed to make some significant improvements in the Pay Commission's recommendations. These improvements alone are likely to cost the exchequer Rs. 61 crores a year on a recurring, and Rs. 25 crores on non-recurring basis.

On the receipts side, there have been shortfalls. The stagnation in production in a number of major sectors of industry, caused by shortage of raw materials and power cuts, has adversely affected receipts from excise duties. Shortfall on this account is estimated to be Rs. 107 crores. The net additional impact of the financial working of the Railways on the general budget in the current year is expected to be around Rs. 107 crores.

Despite all efforts, the year-end deficit will be of the order of Rs. 650 crores.

Budget Estimates 1974-75

The Budget for 1974-75 provides for a total outlay of Rs. 2966 crores for the Plan. Out of this Rs. 911 crores have been provided as assistance to State and Union Territories Plan, while the provision for the Central Plan is Rs. 2055 crores. This provision represents a difficult compromise between two conflicting considerations, namely to keep deficit financing to the minimum and to keep the wheels of production moving. Particular care has been taken to make adequate provision for such industrial and agricultural schemes and projects as are essential for the future growth of the economy, and are likely to be completed in the first two years of the Fifth Plan, so that the economy derives the benefits from investments early enough in the Plan period.

The role of coal as the most important source of commercial energy has been underlined by the current shortage of oil and the resultant energy crisis. The depelopment of coal has, therefore, been accorded very high priority in the budget for 1974-75. Rs. 97 crores have been earmarked for this purpose. In other words the outlay on coal has been increased four times as compared to the provision of Rs. 24 crores last year.

The budgetary provision for steel production has been fixed at at Rs. 162 crores. If one adds to this figure the internal resources available the total figure amounts to Rs. 276 crores, which is Rs. 75 crores more than the total of Rs. 201 crores available this year. In order to reduce the country's acute dependence on imported supplies of non-ferrous metals a provision of Rs. 75 crores is being made in the budget for 1974-75 for the development of this vital sector. This is against Rs. 56 crores provided this year.

The railways have run into serious financial difficulties and their own resources may not be sufficient to finance a Plan of an order which will meet the requirements of our economy. I have, therefore, considerably stepped up the budgetary support for the Railways to Re. 342 crores next year, as against Rs. 181 crores in the current year.

The importance of rural electrification in developing the rural economy can hardly be over-emphasised. Though many of the rural electrification schemes fall in the State Plan sector, as a special case, I am providing Rs. 40 crores for the Rural Electrification Corporation over and above Rs. 790 crores of assistance provided to States for their Plans. The total budgetary provision for power in the Central Budget during 1974-75 will be Rs. 121 crores.

Considering the current shortage of fertilizers the budget provides Rs. 163 crores for this sector as against Rs. 94 crores in the current year. We are providing Rs. 246 crores as budgetary support for agricultural programmes.

The total provision for the Central Plan in the Budget inclusive of Union Territory Plan of Rs. 81 crores will amount to Rs. 2136 crores excluding Central assistance of Rs. 830 crores for the Plans of the States. In addition, extra budgetary resources for financing the Central Plan will amount to Rs. 574 crores. The resources for State Plans for 1974-75 will be of the order of Rs. 2059 crores. Thus, the total Plan outlay during 1974-75 will amount to Rs. 4769 crores as against Rs. 4364 crores in 1973-74.

We have decided in favour of a larger Plan outlay to enable us to move faster towards the twin objectives of removal of poverty and attainment of economic self-reliance. I am however convinced that

Plan investments can yield benefits on the scale anticipated only if the Plan is implemeted efficiently and all the participants in the productive process—management and labour—accept the larger obligations they owe to the community.

The outlay on Defence has been provided at Rs. 1915 crores which includes the provision for additional funds required on account of the acceptance of the recommendations of the Third Pay Commission.

It is difficult to estimate the impact at this stage of energy crisis with any degree of certainty. We have assumed some deceleration in the growth of revenues from excise and customs. Together, these two sources are expected to yield Rs. 3769 crores in 1974-75 as compared to Rs. 3608 crores in 1973-74 according to the revised estimates. The estimated yield from direct taxes is Rs. 1423 crores as against Rs. 1354 crores in 1973-74 revised estimates. The progress in small savings collections is gratifying and estimates for 1974-75 are placed at Rs. 360 crores. The estimated net receipts from market borrowings at Rs. 498 crores also show a marginal improvement over 1973-74.

Taking into account all the provisions for expenditure and the estimates of resources, the budgetary gap at existing rates of taxes will amount to Rs. 311 crores.

Direct Taxes

One of the important recommendations of the Wanchoo Committee relates to reduction in the rates of taxes. Under the proposed rate schedules, no income-tax will be payable by individuals or Hindu undivided families having income not exceeding Rs. 6,000. The marginal rate of basic income-tax will stand at 70 per cent on the income in the slab over Rs. 70,000. In the case of Hindu undivided families having at least one member with an independent total income exceeding the minimum exemption limit, the marginal rate of 70 per cent will be attracted at income levels over Rs. 50,000. The rate of surcharge will be reduced to a uniform level of 10 per cent in the case of all categories of non-corporate tax-payers. The combined incidence of income-tax and surcharge, in the case of individuals and Hindu undivided families, will stand at 77 per cent of the taxable income in the highest slab. In order to ensuse that the effectiveness of the fiscal instrument for reducing disparities in incomes and wealth is not impaired, I propose to increase the rates of wealth-tax on the slabs of net wealth over Rs. 5,00,000 in the case of individuals and

Hindu undivided families, where no member has net wealth exceeding Rs. 1,00,000.

I also propose to rationalise some of the exemptions available at present under the Wealth-tax Act. I propose to withdraw the separate exemption in respect of farm houses. Taxpayers will, however, have the option to claim exemption in respect of one farm house, or one other house property within the existing limit of Rs. 1,00,000. Exemption in respect of agricultural land will be linked with the exemption in respect of specified financial assets, so that the total exemption in respect of agricultural land and specified financial assets will be limited to Rs. 1,50,000.

The changes in the Wealth-tax Act will yield about Rs. 9.5 crores in a full year, which will accrue in the financial year 1975-76. The reduction in the rates of income-tax on personal incomes would ordinarily have resulted in a loss of about Rs. 60 crores in a full year and Rs. 36 crores in the financial year 1974-75. I am, however, not taking any loss into account for budgetary purposes as I expect that the reduction in the rates of taxes will lead to better tax compliance, and full disclosures of incomes by all taxpayers.

In the case of registered firms, two surcharges are presently levied. I propose to merge the ordinary surcharge payable by such firms with the basic income-tax, and specify only one surcharge at the uniform rate of 10 per cent. In order to retain the liability in respect of basic income-tax in the case of professional firms as well as other firms at more or less the existing levels, I propose to prescribe two separate rate schedules in the case of such firms.

The critical shortage of petroleum products has resulted in an unexpected crisis as a result of which industry has to be encouraged to switch over to other sources of energy. I, accordingly, propose to allow development rebate in respect of coal-fired boilers or any machinery or plant for converting oil-fired boilers to coal-fired boilers where these are installed before June 1, 1975.

In order to simplify the assessment procedure in the case of salaried tax-payers, I propose to substitute the separate deductions in respect of travelling, books, taxes on professions and expenditure incurred in the performance of duties by a standard deduction up to a maximum of Rs. 3,500. Simultaneously I propose to place the valution of perquisites of employees on a more realistic basis. I also propose to liberalise the tax treatment of retirement benefits in certain directions. The retiring gratuities payable under the Payment of Gratuities Act, 1972 will be completely exempt from income-tax. In the case of employees not covered by that Act, the alternative ceiling limits on the exempted amount of gratuities will be raised from Rs. 24,000 to Rs. 30,000 and from 15 months' salary to 20 months' salary.

In order to enable State financial corporations to build up reserves at an acclerated pace, I propose to raise the ceiling limit in respect of amounts transferred to tax exempt reserves to 40 per cent of the current profits. There are a large number of public charitable trusts and registered societies engaged in the development of khadi and village industries. These trusts and societies are doing commendable work under the direct supervision of the Khadi and Village Industries Commission. I propose to exempt all such institutions from income-tax provided they are approved by the Khadi and Village Industries Commission.

As a result of the change in pricing policies, some of the industrial companies are making windfall profits. I, accordingly, propose to increase the rate of surtax from 30 per cent to 40 per cent in respect of chargeable profits of companies exceeding 15 per cent of the capital. This measure will yield Rs. 5 crores in a full year and this will accrue in 1975-76.

To sum up, in the field of direct taxes no effect is expected on tax revenues during the next financial year as a result of the proposals outlined by me. In the financial year 1975-76, there will be an addition of Rs. 14.5 crores as a result of these changes.

Indirect Taxes

Briefly, my proposal is to levy auxiliary duties at the rate of ten per cent of the effective basic duty on unmanufactured tobacco, cigarettes, smoking mixtures, plywood and cement ; at the rate of twenty per cent of the effective basic duty on dye-stuffs, optical bleaching agents, gases, rubber products and plastics ; at the rate of thirty-three and one-third per cent of the effective basic duty on paints and varnishes ; and at the rate of fifty per cent of the effective basic duty on aerated waters, glycerine, cosmetics and toilet preparations. Through these proposals and as a result of the modifications of the basic excise duties I am proposing on the existing items, I expect to raise Rs. 62.38 crores in a year, by way of auxiliary duties. In the case of steel as well as other metals, the auxiliary duties are proposed to be applied only to indigenous production and will not be attracted by way of countervailing duty on imports, as hitherto. I propose to extend a similar exemption in the case of plastics. In the sphere of basic excise duties, my proposals naturally cover a wider range and have been made with the multiple objects of rationalisation, curbing consumption, mopping up fortuitous gains and, not the least important, I must confess, raising revenue. I propose to increase substantially the basic excise duties in respect of "special boiling point" spirits, raw naphtha intended for methanol and petro-chemicals, benzene, etc. used for a variety of purposes, asphalt and bitumen, mineral turpentine oil, waxes and blended or compounded lubricating oils and greases. Through these proposals, I expect to raise an additional revenue of Rs. 22.48 crores from the petroleum group.

The rates of excise duty on various types of motor vehicles have remained unchanged for some years now. I, therefore, propose to rationalise the rates of duty by replacing the existing alternative rates by ad valorem rates. The proposals relating to motor vehicles are estimated to net an additional revenue of Rs. 16.25 crores.

The existing rates of duty on refrigerators, air-conditioners. refrigerating and airconditioning machinery, appliances, and parts, are being stepped up, with certain modifications in respect of a few existing exemptions. The present concessional rates in favour of public, run hospitals, cold-storage plants and factory establishments are not however, being disturbed. These changes are expected to bring it additional revenue of Rs. 5 crores in a year.

I propose to increase the duty on T.V. sets from 10 per cent ad valorem to 20 per cent ad valorem. Extended play records are also being brought within the dutiable category. I propose to exemp-totally all radio-sets produced in the small-scale sector and sold to the consumer at a price of not more than Rs. 225 per set. These measures are estimated to bring in a net revenue of Rs. 1.20 crores.

Cotton textiles being an item of mass consumption, I am quite alive to the need for forbearance in increasing the rates of duty on certain categories of yarn and fabrics. My proposals, therefore, cover only super-fine, fine and medium-A fabrics. In the case of cotton yarn, the escalations are confined to higher count groups. I have also rationalised certain exemptions and compounded levy rates. These measures relating to cotton yarn and cotton fabrics are estimated to yield an additional revenue of Rs. 22 05 crores.

I propose to increase the existing two rates of duty on polyester fibre to a uniform rate of Rs. 40 per kilogram. Suitable increases in the existing rates applicable to different denier groups of polyester filament yarn, sympathetic revisions in the rates of duty on staple fibre spun yarn, certain categories of blended yarn, and an increase in the rate of duty on resin-bonded slagwool, are also being proposed. These proposals would bring in an additional revenue yield of Rs. 13.99 crores.

I propose to rationalise certain exemptions relating to pig iron, steel ingots and products produced with the aid of electric furnace, and to products made out of duty-paid cut-pieces of steel ingots, which will result in an additional revenue of Rs. 7.20 crores.

I propose to make suitable upward revisions in the existing rates on paper and paper board, apart from rationalising certain exemptions and classifications. These measures will result in an additional revenue of Rs. 10 crores.

As straight revenue-raising measures, I propose to increase by 5 per cent ad valorem the existing rates of duty on surface active agents, office machines, metal containers, rolling bearings, welding electrodes, coated abrasives and grinding wheels, dry batteries, certain categories of glass and glassware, chinaware and porcelainware and thereby raise an additional revenue of Rs. 20.17 crores.

As a part of our efforts to mobilise resources, I propose to levy for the first time excise duties at varying rates on tooth-paste (including dental cream), electrical stampings and laminations, specified cutting tools, tape and cassette recorders, castalloy permanent magnets and sensitised photographic paper and board. These new levies would bring in an additional revenue of Rs. 8.20 crores.

Customs Duties

I propose to continue for another year the auxiliary duties of customs and the exemptions relating to them, with a slight modification. At present, these duties are levied at three differential rates of 20%, 10% and 5%. I propose to raise the rate applicable to the middle slab from 10% to 15%. This modification will yield an additionel revenue of Rs. 16 crores in a full year. The only other proposal I have to make concerns whisky, brandy, gin and certain other spirits by way of an increase in the basic duty from Rs. 60 per litre to Rs. 80 per litre. Inclusive of additional duties, consequential to the changes in excise duties, the additional revenue from import duties will amout to Rs. 20 05 crores annually. Taking Customs and Central Excise duties together and exclusive of States' share, the additional revenue accruing to the Centre will be of the order of Rs. 186.10 crores in a full year. So far as the Union Budget is concerned, the various proposals would imply, for 1974-75 additional revenue aggregating Rs. 186 crores. The budgetary gap of Rs. 311 crores will accordingly be now scaled down to Rs. 125 crores.

ECONOMIC AFFAIRS

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Stop Cheap Slogans to Save the Economy

Wants and more wants are the key-words of our economy. Of course there are privileged,—the black marketeers, hoarders, corrupt officials, corrupt ministers and, in general, the businessmen. They live in another world, where they float in opulence while the vast multitude of people have been sinking in poverty in the other world. These human lives raise their weak voice to make the civilized world convince that they have the right to work and live ; if opportunity is given they shall be challengingly productive ; each one can be an asset to the society.

Why is this state of affair ? For the bad planning of the economy ? Least doubt in it. In the luxury efforts for a hurried development of the economy the planners have spoiled everything. The alien plans have neither the backing of a strong national political system nor that of the people. It has been sustained by foreign savings and glamoured by foreign revolutionary slogans. Time has thrown out both and the economy is now weightless in space. But this has not deterred us. We have still all cheap slogans and no admissions of guilts. We have a great skill in borrowing and coining slogans. "Garibi hatao" to "right reactionary" are all vulgar political slogans to deceive the hungry people. The slogans like "need-based pay-packet", "pay to neutralize the price rise", "right to strike", "bandh", "work to rule", mass casual leave", etc, etc have both economic and political contents. People are amused of them but helplessly surrender to the pressure of the political circumstances that assert the slogans.

The ends of all economic activities are to continuously raise the consumption levels of each and all. And the driving means of higher consumption is higher production. This is the crux of social welfare of all isms. Isms differ not on the basic object—higher levels of consumption—but on who will own and control the factors of production and on the principles of income distribution.

Thus, there cannot be any two opinions that production has to be increased. This calls for a hard and militant discipline in the production field. "I will consume but not produce",—is not the saying of a madman but of a man having certain political methods to see and do things on his own. Such persons are dangerous to the society. The problem is how to contain them and their organizations. The solution lies in politics. Such unwanted persons are the products of political insanity now prevailing in our country. Here the people are led without leaders, or, to see things from the opposite angle, all are leaders without anyone being led.

The economy is also in a funny phase. Once new money had been put to circulation to increase the rate of investment on the assumption that the "multiplier" would not be eaten up by the price rise. For there was a strong sense that the workers would work to the best of their ability, management would manage efficiently, inputs, foreign aid, and know-how would flow as desired and the consumption would be suitably curbed commensurate with the quantum of the flow of consumer goods. And, above all, all the political parties would work with patriotic feelings and fervour to advance the national economy to the plane of what is lustfully designated as "self-reliance". But reality has given a reverse reply.

The indolence of workers and management and the perversion of all political parties have reached such a height that now no nuts or bolts of the national economic machinery, so gigantically laid out, move to work. Too much money and an incessant flow of new money, as a cause and result, have clogged the machinery. A physical pull-out seems to be the only answer to this dead-lock. That does not mean any absolute ruthlessness on any political party or person, so typical to a totalitarian state. For it will breed chaos and confusion and invite a social revolution in desperation. Neither does it deserve handing over the ownership of production factors and management of the economy to the inglorious private sector to construct a society of capitalists. On the other hand, the situation can be improved and a new lead can be given if we are taught that simple truth that everyone has the birth right to live with human dignity which is conditioned by everyone's bounden duty to work for the cause of the nation to the best of one's ability. "Duty Precedes the Right"—this should be our national slogan, now and ever.

Indo-USA Interdependence

Despite the nagging issue of inflation, an ailment that now seems to afflict much of the world, I can report to you that the American economy is in excellent health.

Our Gross National Product in 1973 was about Rs 1 million crores. In 1974, we expect a moderate but steady rise of perhaps two percent in real terms, about eight percent in dollar terms.

Of much more importance, our wheat crop should be splendid this year. Responding to last year's strained situation in the world's agricultural markets, American farmers were encouraged to cultivate every hectare at their disposal. The result was an increase in the planting of wheat, for example of more than 19 percent over the last crop. And farmers in America expect a record wheat crop this summer, in the vicinity of 57 million metric tons, an increase of some 24 percent over last year's harvest. That is an example surely of what can be done when the world needs food.

The United States, in response to some of these developments, should once again this year have a favorable balance-of-payments, a point of no great interest perhaps to other countries excepting that it is in the context of a general economic well-being that countries become open, innovative in their economic life. Our balance of payments surplus was Rs. 4,988 crores in 1973, and present early indications are for 1974 to be of the same or even greater magnitude.

The American economy seems also to be coping successfully with the dislocations of the world fuel economy, and the situation is apparently improving. Winter was on the whole gentle with us as it rarely is. Fuel is becoming available in greater quantities ; the Federal Government has not had to resort to rationing, and it appears that it will not now do so. The lines for gasoline that were evident in the United States as recently as February have disappeared. Although prices are higher than they were a year ago, a liter of petrol in an American service station now costs about one rupee, which is substantially less than the price most European nations were paying even before what we now call the energy crisis.

Foreign trade is up as would be suggested by these figures. And trade with India is up in particular, at least I think it is up in particular ; we haven't got what I would think to be the most important data. India's exports to the United States in 1973 rose nine percent in value to Rs. 359 crores. I think that's really nine percent in rupees or in dollars if you denominate it. I'm not sure the volume rose as much as that, and not nearly as much as it should have done.

Similarly American exports to India in 1973 climbed 46 percent to Rs. 392 crores, of which about half represents imports of American agricultural products. But I know that your exports rose nine percent, your imports rose 46, in denominated currency terms, not necessarily in volumes but not a good enough exchange.

The United States practices what might be called democratic capitalism. India is developing its own brand of democratic socialism. The differences are real. And yet to dwell on the differences is to disregard what I view as the highly complementary nature of our two economies, complementary in the sense that economists use that term. I hasten to add that the complementarity is nothing for which either of us can take credit ; it is, rather, the result of historical forces operating in widely separated and distinctive environments. But to fail to exploit this complementarity would redound to our discredit. And if I have learned anything in the past year, it is that India and the United States are capable of working together on matters that both perceive as redounding to their mutual advantage.

The times in which we live are not easy. They never are. Even so, the past year was special. We have seen sweeping changes in the world's economy and corresponding realignments in its political arrangements. One change that seems to have been welcomed by many Americans and Indians alike is the improvement in the relationship between our two nations. The statesmanship of your leaders and ours has taken us part way down the road to the new and mature relationship that we seek. The United States will look out for its own interests, as will every country, but it will not disregard the interests of others, nor the sense that its own interests are large enough as are India's to generally be the interests of all. I might note in this connection that moves, for example, to restrict the export of American food and fertilizer that arose in the United States in the past year were opposed by the government and were not successful.*

* Daniel P. Moynihan, United States Ambassador to India, at the meeting of FICCI in New Delhi, April 16, 1974.

An Empirical Model for the Analysis of Seasonality of Economic Variables—II

Ranen Ghosh*

(Continued from the previous issue)

Table I : Model II(b)

Regression Number	Regression coefficients (a_j's)							
	a_0	a_1	a_2	a_3	a_4	a_5	a_6	a_7
M_2	+13.78	2.76	−12.25	−30.90	−9.11	−2.89	−2.30	+7.36
	(3.94)	(5.81)	(5.81)	(5.81)	(6.54)	(9.10)	(9,10)	(9.10)
C_2	+11.86	−0.81	−16.63	−24.85	−6.55	+1.84	+4.83	+6.81
	(2.77)	(4.07)	(4 07)	(4.07)	(4.58)	(6.37)	(6.37)	(6.37)

Source : Ghosh, 6(b).

M_2 : The regression equation, model II(b), with money supply (M) as the dependent variable ; trend free.

C_2 : The regression equation, Model II(6), with curency component (C) of total money supply ; trend-free.

These economic models are related to Ghana. Figures in brackets are standard errors.

Section IV. Concluding Remarks.

The conventional time series analysis to isolate seasonal variation as described in Section I provides a method of deseasonalising data. The monthly seasonal index deflates data month by month for all years under study. The regression analysis, as described in Section II, estimates the variables to be analysed for various quarters. These estimates are "average" for all the years under study.

Policy matters are likely to be facilitated by the regression results. Undesirable fluctuations in the economic variable(s), like money supply in our example, in various quarters can be controlled.

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For this purpose, however, the forces which bring forth seasonal fluctuations of the variable(s) are to be identified extraneously, since the economic models so far considered have not enumerated these forces. In case of Ghana, currency component (C) of money supply are more vigorously influenced by seasonal forces than the demand deposit component of money supply. These forces include cocoa financing. This information is extraneous to the models considered here. For policy matters, then, currency component is to be mainly controlled, if seasonal fluctuations in money supply in Ghana are to be avoided as undesirable.

Forecasting facilities are regarded as an important aspect of an econometric model. The dummy variables which take a value of either one or zero, do not provide a direct means for forecasting the dependent variable. If done at all, the forecasting is made only indirectly with a dummy variable model. However, an alternative statement of the model where time variable appears explicitly can help forecasting in a direct way. For more discussion, readers may refer to Ghosh, 6(b).

References :

1. Bank of Ghana a) Quarterly Economic Bulletin, various issues.
   b) Reports of the Board, various issues.
2. Christ, Carl, F Econometric Models and Methods, John Wiley & Sons, Inc, N.Y, 1966, pages 481—488, 512—531.
3. Croxton, F.E., and D.J. Cowden : Applied General Statistics, Prentice-Hall Inc., Engleword Cliffs, N.J, Second Edition, 1960, Chapters 11, 12, 14 and 15.
4. Draper. N. R., and H. Smith : Applied Regression Analysis, John Wiley and Sons, Inc., N. Y., 1966, Chapter 3.
5. Durbin, J. and G. S. Watson : "Testing for Serial Correlation in Least-Squares Regression," Parts I and II, Biometrika, 1950, 1951.
6. Ghosh, Ranen : a) "National Income and Money in India, 1951-63 : An Econometric Study," in Economic Affairs, Vol. 15, No. 4, April, 1970.
   b) 'The Quantification of Seasonality of Money Supply in Ghana," Technical Publication Series No. 28, Institute of Statistical, Social and Economic Research, University of Ghana, Legon, 1972.
   c) "On Measuring Observational Errors of Regression (Economic) Variables," Memeo., 1972.
7. Goldberger, A S. Econometric Theory, John Wiley and Sons, Inc., N. Y, 1964, pages 27-28 ; 218-227.
8. Johnston, J. : Econometric Methods, Mc-Graw-Hill Book Company, N. Y, 1972.
9. Walters, A. A. - An Introduction to Econometrics, McMillan & Co., London, 1968, pages 158-159, 229-30.

(Concluded)

Impact of Inflation on Income Accounting of Financial Institutions

G. D. Roy* and Tapan Kumar Ghose**

In case of continued rise in prices business profit has a tendency to be overstated. This does not necessarily mean that profit under inflationary conditions would be earned at a higher rate every year. As for instance, the rate of annual earning of Assam Match Co., records actually a fall towards the later portion of the period of rising prices.

Assam Match Co

Statement of profit earned annually from 1968 to 1972.

	Proprietary Fund Rs.	Profit Rs.	Rate of earning %	General Index Number of Prices (1961-62=100)
1968	91.12,565	11,25,111	12.3	162.3
1969	1,03,39,605	19,47,526	18.8	170.0
1970	1,18,22,629	22,60,315	19.1	180.9
1971	1,37,02,223	22,58,082	16.3	185.9
1972	1,46,90,571	19,65,367	13.4	211.4

There may be various other factors responsible for fluctuations in the rate of profit as reported in accounts. But what is meant by the above statement is that high, low or whatever profit is reported under the usual accounting system, it is invariably liable to be overstated as such, if the period involved is intervened by a perpetual rise in prices.

The principal causes of this overstatement of profit in case of rising prices, at least those which are apparent, are said to be mainly two, viz., (1) Depreciation charged at an inadequate rate on Fixed Assets, and (2) Over-valuation of Stock-in-Trade.

Under the conventional method of accounting Fixed Assets are shown at "Cost less depreciation". As for instance, in paragraph

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30(a) of the Official recommendation 15 of the Institute of Chartered Accountants in England and Wales, it is stated "historical cost should continue to be the basis on which annual account should be prepared......". This means that "the properties should be shown in the Balance Sheet at cost less depreciation".[1] In other words it may be said that under the conventional method of accounting, assets are "recorded at their actual cost",[2] and provision for depreciation, charged to Profit and Loss Account at the end of every accounting period, is based on such recorded cost.

The above method of maintaining the accounts of Fixed Assets does not create any problem so long as the value of money remains stable. But in case of rising prices the periodical depreciation charges, when allowed to remain invested in the business over the life of the asset, can create a fund that may be equal in amount to, at least, the original historical cost of the asset but not its higher current replacement cost. As a remedy against this, rate of depreciation should have been higher which would have reduced the amount of profit. Accordingly, at times of rising prices, if historical cost method of accounting is adopted in respect of Fixed Assets, depreciation will be less as depreciation charges "are smaller than they would be if the Plant had been acquired currently"[3] and thus profit will be overstated.

Secondly, under the conventional method of accounting Stock-in-Trade is shown in the Balance Sheet at 'cost or market price whichever is less'. This method of valuation of Stock-in-Trade received support from the professional bodies of various countries including the Council of the Institute of Chartered Accountants in England and Wales. Here also the problem of replacement will arise as in the case of Fixed Assets, at the time of rising prices. Stock, "even if valued at the historical cost is lower than that of market, takes usually the valuation of latest purchases which is higher than that of earlier purchases in case of continued rise in prices. As a result stocks sold are set against sales at their, more or less, lower actual costs of purchases".[4] Consequently the retained sale proceeds fail to replace the same volume of Stock-in-Trade. Therefore, inadequacy of the additional amount required to maintain the physical volume of inventories in the face of advancing prices"[5] will cause the profit to be 'materially overstated'.

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[1] Quoted from Yorston R. K., Smyth, E. B. and Brown, S. R. Advanced Accounting (Vol. 2) (Law Book Co. of Australasia Pty. Ltd. Sydney 4th Edition, p. 483—Learned Judge Somervell in R. Press Caps Ltd. delivered the Judgement.

[2] Yorston, R. K. Smyth, E. B. and Brown S. R., Accounting Fundamentals (Law Book Co. of Australasia Pty. Ltd. Sydney) Page 10.

[3] Edward B Wilcox—Fluctuating Price Levels in Relation to Accounts (vide Handbook of Modern Accounting Theory, edited by Morton Backer, p. 254).

Now if undercharging of depreciation and over-valuation of Stock-in-Trade are accepted as the causes of overstatement of profit in case of rising prices, there does not seem to exist any likelihood for overstatement of profit in case of financial institutions like banks. The reasons are as follows :—

(a) Replacement of Fixed Assets out of internal finance is not likely to create any problem in case of financial institutions like banks as the proportion of fixed assets is comparatively very small. The following table will show that the proportion of fixed assets in case of financial institutions is negligibly small as a result of which depreciation, even if under-charged, does not inflate profit unduly to any recognisable extent :—

Fixed Assets (1971)
Shown as Percentage of Total Assets

	Net Fixed Assets.	Total Assets	Percentage of Fixed Assets to Total Assets
	Rs.	Rs.	
Assam Match Co.	51,23,895	2,72,67,362	19% (Approx.)
Bridge & Roof Co. (India) Ltd.	29,21,957	4,43,05,304	7% ( )
The Elgin Mills Co. Ltd.	1,85,75,978	7,10,49,544	26% (
Bank of India	6,50,74,757	715,13,24,242	0.9% (,,)
United Bank of India	3,82,67,774	289,36,54,189	1% (,,)
Indian Overseas Bank	1,71,22,611	174,69,29,554	1% (,,)

(b) The percentage of Stock-in-Trade to total assets in case of the first three companies are respectively 15%, 40% and 53.2% (actuals are respectively Rs. 41,08,439 : Rs. 1,77,75,379 and Rs. 3,78,19,582). This is an additional apparent source of overstatement of profit. But as financial institutions like banks have evidently no Stock-in-Trade, no problem is expected to arise in this regard in case of rising prices.

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[4] G. D. Roy—A Survey of Accounting Ideas (1st. Edition, Alpha Publishing Concern) P. 307.

[5] Financial Accounting Theory—Measuring Profit under Inflationary Condition, An article by W. A. Paton, Edited by S. A. Zeff & T. F. Koller, p. 368.

It is, however, often stated that banks are dealers in credit.[6] Accordingly it can be said that a bank sells credit (by receiving deposits) and purchases credit (by employment of funds) and earns its profit therefrom. But a fund of saleable credit in hand which may be treated as Stock-in-Trade or Inventory, is difficult to be conceived. Besides, banker's ability to create credit does not seem to be of any help in this matter because, even if a fund of credits or future debts is conceived of as Stock-in-Trade or Inventory, it cannot be subject to any revaluation due to change of index number of prices as the amounts of such credits or debts are 'unalterably fixed by legal contracts between parties'. Thus the possibility of overstatement of profit is absent from the side of Stock-in-Trade also.

The conclusion that may naturally follows from the above study is that banks have little likelihood of showing profits at an unduly inflated amount and rising prices do not create any accounting problem in case of them. But before arriving at that conclusion the matter may be reconsidered from a different standpoint.

Suppose, a firm was started on 1.1.70 with a capital of Rs. 15,000/- invested in Fixed Assets Rs. 10,000/- (acquired on the same day) and Cash Rs. 5,000/-. On the same day when general index number of prices was 100, Stock-in-Trade was purchased for Rs. 6,000/- (Rs. 4,000/- in Cash and Rs. 2,000/- on Credit) and half of the stock was at once sold for Rs. 5,000/-. There was no other transaction in the rest of the year and on the last day i.e., 31.12.70 the price index went up to 120.

Profit, according to usual accounting practice, would be ascertained thus :—

Sales	Rs.	: Rs. 5,000.00
Purchases	: 6,000.00	
Less Closing Stock	: 3,000.00	
Less Cost of goods sold		: Rs. 3,000.00
Gross Profit		: Rs. 2,000.00
Less Depreciation @ 10% on cost of Fixed Assets		: Rs. 1,000.00
Net Profit		: Rs. 1,000.00

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[6] Japanese Banks Act, 1927, defined Banks as "institutions which carry operations of giving as well as receiving credit."

The position as on the last day of the year would be represented by the following Balance Sheet—

Balance Sheet as on 31.12.70

Liabilities	Rs.	Assets	Rs.	Rs.
Capital	: 15,000.00	Fixed Assets	10,000.00	
		Less Depreciation	1,000.00	9,000.00
Profit	: 1,000.00	Closing Stock		3,000.00
Creditors	: 2,000.00	Debtors		5,000.00
		Cash		1,000.00
Total	18,000.00		Total	18,000.00

It may be observed that owing to rise in prices, the 'cost of goods sold' matched with the revenue, as shown above, cannot retain as much revenue as would purchase the same quantity of Stock-in-Trade again. As a remedy cost of goods sold has to be raised by (Rs. 3,000×120/100—Rs. 3,000) or (Rs. 3,600—Rs. 3,000) or Rs. 600. Similarly, for making the depreciation charge adequate enough for helping replacement of fixed assets, it required to be enhanced from Rs. 1,000 to Rs. 1,000×120/100 or Rs. 1,200, that is by Rs. 200. Thus the reported profit is overstated by Rs. 600+Rs. 200=Rs. 800 in all.

Though the cause of the overstatement of profit seems apparently to be the resulting inadequacy in the provision for the replacement of physical assets, that is Fixed Assets and Stock-in-Trade, there is another side of the picture that may be revealed by a Balance Sheet re-stated in terms of the current purchasing power of rupee.

Re-stated or Stabilized Balance Sheet as at 31.12.70 in terms of purchasing power of rupee as on the same day.

Liabilities		Assets		
Capital :		Fixed Assets		
Rs. 15,000×120/100=Rs. 18,000		Rs. 10,000×120/100		
Profit :		=Rs.	12,000	
Rs. 1,000×120/100		Less Depreciation.		
=Rs. 1,200				
Less Loss on		Rs. 1,000×120/100		
Stabilization Rs. 800	,, 400	=Rs.	1.200	Rs. 10,800
Creditors	2,000	Closing Stock		,,
		Rs. 3,000×120/100		,, 3,600
		Debtors		,, 5,000
		Cash		,, 1,000
Total	Rs. 20,400		Total	Rs. 20,400

Evidently the loss of Rs. 800, by which the reported profit is found to be overstated, actually comes through, not the physical assets but the money-value assets and liabilities that is Cash, Debtors and Creditors which do not submit to any restatement of their recorded values. The rise in the real-value liabilities (i.e. Capital+Profit that represent proprietary claim on the net assets) is supported by the physical assets to the extent they themselves submit to re-statement but not by net money-value assets (Debtors and Cash less Creditors). To that extent the proprietary claim suffers a loss which is just equal to Rs. 800, that is the amount by which profit was found to be overstated in case of replacement accounting shown earlier. In fact, this is the amount by which profit, in case either of stabilization or of unstabilization, will stand over-stated under the usual system of accounting. Of course, this loss is the net result out of the difference between losses due to Cash and Debtors and gains due to Creditors. Debtors (after realisation) and Cash do not command the same value in real terms, in case of rising prices. But creditors are repaid by Cash, though of equal amount but of lower real-value. There is no remedy against them because of legal canstraints. The debts are unalterably fixed by contracts and accumulated cash cannot afford any addition in the number of units in compensation of fall in purchasing power.

From the above analysis it is now clear that the cause of the overstatement of profit is not an insufficient provison for replacement of physical assets. It is actually due to the fact that the money-value items of assets and liabilities, which are shown in the Balance Sheet at their original value, "fail to respond to any restatement of value".[7] In the official recommendation XII of the Council of Chartered Accountants in England and Wales it is stated that as a result of rising prices there is a fall in the purchasing power of Cash, Bank Balances, Debts and Investments, carrying 'fixed rates of interest or dividend' but this loss of purchasing power of money is not treated as a "reduction of business profit nor are business profits shown as being increased by the benefit derived from the fall in the burden, expressed in terms of purchasing power, of loans and other liabilities incurred before the rise in prices but payable in currency of diminished purcha-

[7] G. D. Roy—A Survey of Accounting Idea (1st. Edition, Alpha Publishing concern) p. 372.

sing power".[8] In this connction a very well-known accounting firm, M/s. Arther Anderson & Co., was found to state that profits or losses "which are an integral part of the total effect of inflation" arise from the fact that "liabilities can be repaid in current dollars that gave rise of liabilities ; at the same time, cash and receivables lose a portion of their purchasing power".

The conclusion that is arrived at from the above study is that business concerns which have a large proportions of physical assets and those which have not are, under inflationary situation, equally vulnerable to the evil of overstatement of profit because of the existence, in both the cases, of money-value assets and liabilities. This may be illustrated from the actual workings of two concerns, one manufacturing and the other financial viz., Assam Match Co. & Bank of India. The percentage of physical assets (i.e. Fixed Assets+Stock-in-Trade) to total asset in case of Assam Match Co. is, as already stated, 19%+15% or 34%, whereas the same for the Bank of India is only 0.9%. The amount by which profit is overstated in both the cases is shown from the following stabilization of balance sheets as at the end of the year 1971 and that of the profit and loss accounts for the said year. Stabilization is a process by which money measures are expressed in terms of the current purchasing power of money.[9]

It is assumed that their has been no addition in respect of capital and fixed assets during the year. As dates of purchases in case of Assam Match Co. whose stablilized final accounts are given first are not available, it is assumed that purchases have been made during the year with a uniform flow. General Index Number of prices as on 1st. January and 31st. December, 1971 are respectively 183.3 and 185.9 and their average is 184.6, base year being 1961-62.

In the above Balance Sheet calculations have been made in the following way :—

Money-value items of Cash and Bank balances, Investments, Debtors, Loans and Advances and Current Liablilities which include Sundry Creditors have been left unaltered as these items are unalterably fixed in money amount. All the remaining items, except inventories, have been re-stated by multiplying each item by the ratio of initial and final index numbers i.e. 185.9/183.3. As no dates of

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[8] Yorston, R. E., Smyth, E. B. & Brown, S. R., Advanced Accounting, Volume 2, (Law Book Co, of Australasia Pty. Ltd., Sydney, 4th. Edition), p. 503.

[9] Henry W. Sweeney, Stabilized Accounting, (Accounting Classic, Edited by S. A. Zeff.), Holt, Rinehart and Winston, Inc., 1964, pp. 24-104.

Assam Match Co.
Balance Sheet as at 31.12.1971

	Unstabilished	Stabilised	
	Rs.	Rs.	Rs.
Liabilities			
Capital	50,00,000	$\frac{50,00,000 \times 185.9}{183.3}$	50,70,927
Reserves	64,44,141	$\frac{64,44,141 \times 185.9}{183.3}$	65,35,547
Current Liabilities	1,35,65,139		1,35,65,139
Profit	22,58,082	22,71,053	
Less loss on change in Purchasing power of money		73.693	21,97,360
	2,72,67,362		2,73,68,973
Assets			
Net fixed assets	51,23,895	$\frac{51,25,895 \times 185.9}{185.6}$	51,96,574
Investment	1,096		1,096
Inventory	41,08,439	$\frac{41,08,439 \times 185.9}{184.6}$	41,37,371
Debtors	12,87,923		12,87,923
Cash & Bank	62,30,914		62,30,914
Loans & Advances	1,05,15,095		1,05,15,095
	2,72,67,362		2,73,68,973

purchases are given in the Balance Sheet, Inventories amounting to Rs. 41,08,439/- have been re-stated in the ratio 185.9/184.6. Loss amounting to Rs. 73,693/-, on change in price level can be seen from the stablized profit and loss statement which has been shown subsequently. Profits amounting to Rs. 21,97,360/-, as shown in the above-mentioned Balance Sheet, is the difference between the totals of the stabilized values of assets and liabilities and this profit must be equal to the profit as worked out in the stabilized profit and loss statement. Therefore, it may be stated that the loss, as worked out, will be the combination of the losses, arising out of the Balance Sheet and also of the Profit and Loss figures.

As dates of purchases and sales are not available it is assumed that these transactions take place in a regular way. So these items have been re-stated in Stabilized Profit and Loss Statement in terms of average index which is 185.9/184.6. Similar is the case of cost of goods sold and of expenses. As it is assumed that no alteration takes place in respect of Fixed Assets during the year, depreciation has been re-stated with the help of the final index.

Assam Match Co.

Stabilized Profit & Loss Statement for the year ending 31.12.71

	Unstabilised		Stabilised	
	Rs.	Rs.	Rs.	Rs.
Sales & other Income		5,11,37,692	$5,11,37,692 \times \frac{185.9}{184.6}$	5,14,97,817
Less Cost of goods sold and other expenses	4,84,69,252		$4,84,69,252 \times \frac{185.9}{184.6}$	
Depreciation	4,10,358	4,88,79,610	$=4,88,10,585$ $4,10,358 \times \frac{185.9}{183.3}$ $=4,16,179$	4,92,26,734
		22,58,082		22,71,053
Less Loss on Change in purchasing power of money	:	:	:	: 73,693
Excess of stabilised Assets over Stabilised Liabilities	:	:	:	: 21,97,360

The Final accounts of Bank of India, stabilised under the same principles, stand thus :—

The losses on change of purchasing power of money recorded in the respective stabilised accounts mentioned above are actually the amounts by which respective profits are overstated. Thus overstatement of profit in case of Assam Match Co. is Rs. 73,693/- (.55 of Proprietary Capital) and that in case Bank of India is Rs. 3,80,145/- (.30% of Proprietary Capital). The results have been obtained under a number of approximations and they are subject to some adjustments owing to purchase and sale of physical assets on different dates when index number of prices are also different. Still, it can be said that the tendency for overstatement of profit increases as the ratio between net money-value assets and proprietary capital increases. The said ratios in case of Assam Match Co. and Bank of India as at the end of the year 1971 are shown in the following table :—

Bank of India
Balance Sheet as at 31.12.71

	Unstabilised	Stabilised	
	Rs.	Rs.	Rs.
Liabilities			
Capital	4,05,00,000	4,05,00,000 × $\frac{185.9}{183.3}$	4,10,74,468
Reserves	7,74,15,822	7,20,15,822 × $\frac{185.9}{183.3}$ 54,00,000 × $\frac{185.9}{185.6}$	7,80,72,518
Deposits	588,23,94,855		588,23,94,855
Borrowings from other Banks	33,64,26,004		33,64,26,004
Bills Payable	3,20,33,027		3,20,33,027
Bills for Collection as per contra	30,76,95,954		30,76,95,954
Other Liabilities	13,07,722		13,07,722
Acceptance as per contra	46,51,04,934		46,51,04,934
Profit & Loss Account	84,45,924	85,17,946	
Less Loss on change in price level		3,80,145	81,37,801
	715,13,24,242		715,22,47,283

Assets			
Cash	35,92,78,690		35,92,78,690
Balances with other banks	15,12,00,419		15,12,00,419
Money at call or short notice	6,13,61,122		6,13,81,122
Investments	156,62,78,640		156,62,78,640
Advances	407,33,04,302		407,33,04,302
Bills Receivables as per contra	30,76,95,954		30,76,95,954
Constituents' liability as per contra	46,51,04,934		46,51,04,934
Premises (Less depreciation)	3,24,49,714	$3,24,49,714 \times \frac{185.9}{183.3}$	3,29,09,995
Furniture (Less depreciation)	3,24,78,542	$3,24,78,542 \times \frac{185.9}{183.3}$	3,29,39,225
Other assets	10,20,05,424		10,20,05,424
Non-banking assets	1,46,500	$1,46,500 \times \frac{185.9}{183.3}$	1,48,578
Total	715,13,24,242	Total	715,22,47,283

	Net money-Value Assets Rs.	Proprietary Capital Rs.	Percentage of money value assets to Proprietary Capital.
Assam Match Co.	44,69,889/-	1,37,02,223/-	33
Bank of India	6,12,86,988/-	11,79,15,822/-	54

Under the inflationary conditions the possibility of the existence of invisible excess profit in case of financial institutions like banks is as real at that in case of manufacturing concerns. Whether it creates a problem to the former in the same way as it does in case of the latter is a separate question. At least banks do not seem to have any replacement problem. Nevertheless, the interest of the society demands finding out of whether this excess profit should be retained in the business or distributed as dividend to the share-holders. In the former case banks receive additional impetus for credit expansion while, in the latter, more liquid resources are placed in the hands of the public. It seems debatable which one is more favourable for undermining the inflationary pressure. Apart from the question of maintenance of real capital, it has to be examined if, by letting out this excess profit by way of dividend, banks are able to maintain their level of activities in real terms.

BANK OF INDIA

Stabilised Profit and Loss Statement for the Year Ending 31. 12. 71

	Unstabilised		Stabilised	
	Rs.	Rs.	Rs.	Rs.
Net Income		42,43,28,755	$\frac{42,43,28,755 \times 185.9}{184.6}$	42,73,11,569
Less Expenses	41,08,12,831		$\frac{41,08,12,831 \times 185.9}{146.6}$ = 41,36,51,738	
Depreciation	50,70,000		$\frac{50,70,000 \times 185.9}{183.3}$ = 51,41,915	
		41,58,82,831		41,87,93,623
		84,45,924		85,17,945
Loss on Change in Purchasing				3,80,145
Power of money				*81,37,801

Note: This profit is reckoned after appropriation of Reserve of Rs. 54,00,000 for which the stabilization has been done in the Balance Sheet.

Cost-Benefit Analysis Techniques and their Applications

H. C. Goel*

Before any project involving large financial investment is to be undertaken, it is necessary to study its economic feasibility aspect. The two important components of costs and benefits to be derived from a project during its life period are computed and thus by comparing them the economic feasibility of the project is studied. Only those investments where the benefits are more than the costs are considered for implementation. But owing to limited financial and other resources all such projects, whether in public or private sector, cannot be undertaken simultaneously. Economic priorities have to be assigned to these projects and they should be taken up only in that order. For the purpose of assigning priorities to such several projects which are already found economically justified there are several methods which are commonly used. All these methods have their own merits and shortcomings. But before we actually study these methods there are certain items which need some explanations.

For a project in private sector—the concept of costs and benefits is nothing but the total financial investment incurred on the project and the total monetary returns received from it during the entire life of the project. But if a project is to be undertaken in public sector, it is not the financial costs and benefits that is taken for the purpose of economic analysis rather it is the economic costs and the social benefits that are compared for the purpose.

The evaluation of economic cost of a particular factor of production is thus estimated on the basis of its "Shadow Price" or "opportunity cost" and not at the market rate as in the case of a project in private sector.

Shadow Price

The "shadow price" or "opportunity cost" of a factor of production is nothing but the cost to the society or the social value of

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goods and services that have to be foregone and this may or may not be the actual financial payment made for the goods or services to which it refers. In a developing country where there is large unemployment the cost on account of labour is not calculated at the existing wage rate rather at a rate somewhat less than that—which is determined on the basis of the "opportunity cost" of labour. However, this cost depends upon the nature of unemployment, the value placed on leisure and many other considerations. As a general rule if there are many applicants for a job on the road at the wage rate set by the Government the "opportunity cost wage" is taken quite low, less than half the money wage. On the other hand, if there are a few applicants the "opportunity cost" should be taken much nearer to the money cost.

Similarly, while estimating the cost of materials imported from other countries, the cost of such materials should not be estimated at the foreign exchange rates prevalent in the country. For a country where there is a shortage of foreign exchange resources the costs of imports should be adjusted by giving higher values to these imports. In adjustments, of course, only arbitrary weights have to be assumed keeeping in view the acuteness of foreign exchange resources. Thus the evaluation of any saving or earning of foreign exchange at a time when the economy of a country is severly constrained by a balance of payments deficit should be done on the basis of "shadow price" of foreign exchange rate which would be higher than the normal exchange rate.

Exclusion of Indirect+Taxes from the Economic Cost

For any investment in private sector taxes like sales tax, excise duty, etc., constitute a significant part of the total cost of materials incurred in the production of a commodity. These taxes do not reflect any real cost to the economy since they represent merely transfers rather than any payments for the use of real resources. Thus in the computation of economic cost of such facilities all such identifiable indirect taxes should be excluded.

Rate of Interest

The factor of rate of interest (r) plays quite an important part in a problem of financial feasibility of an investment. For an investment in private sector this is nothing but the rate of interest against which a long-term loan can be obtained by an organisation from a scheduled bank.

But in case of an investment in public sector it is not this financial rate of interest that is taken into consideration rather a rate somewhat more than this viz, an economic rate of interest or the social discount rate which is nothing but the rate of return which an investment could yield in the best investment opportunity that has to be foregone because of scarcity of capital.

I. Rate of Return Method

In this method the initial capital investment is taken as the 'cost' of a project and the annual benefits to be gained from the project as 'benefits'. The ratio of annual benefits and the total cost expressed in terms of percentage is taken as the annual rate of return of the project, i.e. $\frac{\text{Annual benefit}}{\text{Capital investment}} \times 100$. A project with a rate of return not less than the normal rate of interest prevalent in the country is considered as economically justified. Also economic priorities to such various economically justified projects can be allotted on the basis of the respective rates of return to be derived from different projects.

But this method has a great disadvantage. It does not take into account the life of a project or, in other words, the period through which the benefits would be derived from a particular project. Thus in order to avoid this difficulty the initial cost of a project is to be translated in terms of annual cost whch can be done with the help of "Capital Recovery Formula" (CRF) which is explained below.

If n stands for the number of years representing the life span of a project from the time the original investment is made and *r* for interest rate, the formula for CRF is expressed as :—

$$\text{CRF} = \frac{r(1+r)^n}{(1+r)^n - 1}$$

And the annual cost of a project=CRF×initial cost of the project. For given values of *n* and *r* the conversion factor represented by the above formula is constant. CRF for *n* from 5 to 50 years interval and for *r* of 6, 8 and 10 per cent is given below :—

II. Benifit-Cost Ratio

The benefit-cost ratio is a method of comparing economic alternatives. It is used to determine (*a*) which alternative is worth-while ;

and (*b*) which alternative offers the greatest economy. It is the ratio of annual benefits to annual cost. Thus a project with a higher benefit-cost ratio is given priority.

Capital Recovery Factor

Life in years	6%	8%	10%
5	0.23740	0.25638	0.26380
10	0.13587	0.14903	0.16275
15	0.10296	0.11683	0.13147
20	0.08718	0.10185	0.11746
25	0.07823	0.09368	0.11017
30	0.07265	0.03883	0.10608
35	0.06897	0.08580	0.10369
40	0.06646	0.08386	0.10226
50	0.06344	0.08174	0.10086

III. Capitalised Revenue or net Present Value Method (NPV)

The above methods of 'rate of return' and 'benefit-cost ratio' possess certain disadvantages. While comparing the two factors of costs and benefits these methods take into consideration only the benefits in the initial year which is generally the base year. They do not take into account as to how these benefits develop with time. It is often found that the magnitude of annual benefits increases with time especially in projects concerning roads and road traffic the benefits are found, in actual practice, increasing quite sharply. Thus to avoid the shortcoming of the above methods of giving greater weights to a project with annual benefit of higher magnitude over a short period as compared to benefit of somewhat lesser magnitude but spread over a longer period, this method of capitalised revenue or net present value (NPV) of the total costs and benefits to be derived from a project during its entire life period is developed. Through this method the total costs of the project including the initial cost and the maintenance cost, etc., incurred during the life period of the project is discounted at the base year of the project with the help of 'discounting technique.'

Similarly all the benefits during the life period are discounted to the basic year and net present value (NPV) of the gains from the project which is nothing but the difference between the net present values of benefits and costs during the entire life period of the project is estimated. A detailed explanation of the "Discounting Technique" is given below.

Discounting Technique

This is a technique which is quite widely applied to reflect the time value of money in studies concerning economic feasibility of public or private investment. Discounting is quite necessary because the inflows and outflows of money occuring at different values and are therefore not comparable. If r is the rate of interest or the discount rate then the economic value of Rs. P invested to-day will be somewhat more than this after one year i.e., $P(1+r)$. Similarly after n years it will be equivalent to $P(1+r)^n$. Likewise, an income or a gain of Rs. G, earned during the first year will be equivalent to an income of Rs. $\frac{G_1}{(1+r)}$ in the base year. Similarly an income of Rs. G_2 earned during the second year will be equivalent to an income of Rs. $\frac{G_2}{(1+r)^2}$ in the base year and so on. Thus with the help of this technique the series of benefits and costs during the entire economic life of a projects are computed to the initial base year and thus the net present value (NPV) of the project is estimated. Mathematically,

If C is the present values of the services of costs to be incurred over the life of a project,

t is the time units in the economic life of the project (if annual periods are considered and the project has a total life of T years, t will have values—

$t=0, 1, 2, \ldots\ldots T$)

$r=$is the rate of interest per period, then

$$c=C_0 \frac{+C_1}{(1+r)} \frac{+C_2}{(1+R)^2}+\ldots\ldots\ldots \frac{C_T}{(1+r)^T}$$

Similarly the future benefits or income be discounted in the same manner as the future costs.

If G is the present value of a series of gains or benefits to be expected from the project with G_0, the gain in the base year, G_1 the gain after one year and so on.

t equals number of time units in the life of the project,

r equals rate of interest per period

$$\text{then } G=G_0+\frac{G_1}{(1+r)}+\frac{G_2}{(1+r)^2}+\ldots\ldots\ldots\frac{G_T}{(1+r)^T}$$

Then the net present value of the project (NPV) which is the difference between the discounted (to present value) future costs and benefits as accruing summed for all years during the life of the projects is nothing but equal to $G-C$. Thus with the criteria of this difference to be the maximum, the economic priorities to different projects can be allotted.

IV. Internal Rate of Return Method

For the purpose of illustration of this method let us have an example of a project with an initial fixed investment of Rs. 100 and a stream of benefits of Rs. 50 and Rs. 86.4 in first and second years respectively. Using a discount rate of 20 per cent the present value of 50 in year one is $\frac{50}{(1+0.2)}=40$. Similarly the present value of the amount of 86.4 in year 2 when discounted at 20% is $\frac{86.4}{(1+0.2)}=60$. Thus the present value of both the benefits of 50 in year one and 86.4 in year two is equal to 100 which is exactly equivalent to the initial cost of the facility. Thus this 20 per cent discount rate which just equals the present value of the positive net benefits to the present value of the net outlay is taken as the Internal Rate of Return (λ) of the above stream of net benefits.

Thus the internal rate of return (λ) is that for which the

$$\text{sum } \frac{B_1}{(1+\lambda)}+\frac{B_2}{(1+\lambda)^2}+\cdot \qquad \cdot \frac{B_n}{(1+\lambda)^n}=KO$$

$$\text{or } \sum_{t=1}^{n} \frac{B_t}{(1+\lambda)^t}=KO$$

Where KO is the total cost of the project, λ the 'internal rate of return' is also called as the 'marginal efficiency of investment'.

On the computation of this rate of return a project can be accepted if the rate is in excess of the pre-determined social discount rate otherwise the same is rejected. An important drawback in this method of internal rate of return (IRR) is that the rate cannot be computed easily.

The criteria of selecting projects on the basis of IRR are further complicated when used to compare mutually exclusive projects. It is not necessary that a project with the highest IRR is the best. Consider three projects X, Y and Z as given below :—

	Cost (K)	B_1	B_2	B_3	Total discounted benefits (B)
X	20	15	16	—	27.5
Y	100	—	—	160	120.2
Z	100	50	86.4	—	117.4

The benefits B_1, B_2 and B_3 at different periods are discounted at the rate of 10 per cent to the reference year to, then B is the total discounted benefits to the reference year ; K is the total cost.

	B-K	$\frac{B\text{-}K}{K}$	λ	B/K
X	7.5	0.375	0.34	1.37
Y	20.2	0.202	0.17	1.20
Z	17.4	0.174	0.20	1.17

B-K is the excess of benefits over costs or, in other words, =NPV.

$\frac{B\text{-}K}{K}$ is the "excess benefit-cost" ratio and, finally, λ shows the internal rate of return.

When these projects are ranked according to different criteria the order of preferences is observed to be quite different in different cases such as

(i) From 'net present value' (NPV) point of view the projects are ranked in the order as Y, Z and X ;

(ii) from the 'total benefits-cost ratio' point of view the projects are ranked in order of X, Y and Z ;

(iii) from the 'internal rate of return (λ)' point of view the projects are ranked as X, Z and Y ;

(iv) from the 'excess benefit-cost ratio' point of view the projects are ranked in the same order as that in the case of 'total benefit-cost ratio'.

Comparative Analysis of Different Methods

There is thus always a controversy that arises about the approach that should be adopted in decision rule which is largely because of different conclusions on project choice that may sometimes arise depending on the approach adopted. Where only the economic feasibility aspect of project is to be studied both the methods of internal Rate of Return (IRR) and Net Present Value (NPV) will lead to the same conclusion. But if there are several such projects and they are to be ranked in order of profitability, the two methods may lead to different results. The IRR method may not always rank projects correctly but the NPV method does so provided that all the ranked projects involve no risk. But there is one important shortcoming in case of NPV method which is that this method involves the choice of a discount rate which is quite complicated in case of investments in public sector whereas, the IRR method does not involve this choice. Also the IRR criteria of selecting projects have certain drawbacks such as :—

(i) **Sensitivity to economic life**

In cases where projects with different economic lives are compared, the IRR approach gives higher weightage to projects with shorter life since the IRR being a function of both the size of the capital outlay and the life period of the project. The approach of NPV on the other hand is not affected by the absolute magnitude of the outlay.

(ii) **Sensitivity to time—phasing of benefits**

Quite often projects do not yield benefits in the initial few years—they have long 'gestation' periods. The IRR will tend to be lower in such cases when compared to projects with a fairly even distribution of benefits over time, even through the NPV of the former project may be larger.

There is one more advantage in favour of NPV criteria over the IRR criteria. In the IRR technique the discounting factor has to be uniform throughout the life period of the project whereas in case of NPV technique varying rates of interest could be applied for the purpose of discounting costs and benefits to be derived from the project during the life period of the project.

Quite often there is only a limited amount of financial resources available for investments during a particular time period, especially in private sector, and there arises the problem of ranking projects in order of preferences and to select the optional combination of projects such that the total combined cost of the projects is within the limits and gives maximum returns. For example, let us have three projects X, Y and Z with the respective costs and benefits as given below and there is a capital constraint of 100 rupees.

Project	Cost (k)	Benefits (B)	B-K	$\frac{B}{K}$	$\frac{B-K}{K}$
X	100	200	100	2.0	1.0
Y	50	100	60	2.2	1.2
Z	50	120	70	2.4	1.4

Ranking the projects by NPV gives the order as X, Z and Y so that X should be the only project to be selected where the net benefits being

(Continued on page 228)

Agricultural Sector in the Punjab Economy—Growth Rate Versus Multiplier Approach

Kuldip Grewal* and Karam Singh**

The growing complex of scientific farming has created greater and stronger linkages between the farm sector and the rest of the economy. The farmers now purchase more off-farm inputs the investments on which farm production is now more dependent. The extent of monetization in the factor markets has increased substantially. Thus, on the average, the farmers spent as high as 29.93 per cent of their total farm income as production expenditure and 31.56 per cent of their total disposable income on farm investments during 1969-70.[1]

The multiplier being 'the marginal effect of a change of one economic variable upon another economic variable, of which the first is a component[2] helps to determine the change in an economic variable, which can be split into different components, due to the change in one of these components.[3] The importance of a sector in the total economy of a region can thus be studied by using multiplier approach. Also, in a growing economy, this approach should be compared with the growth rate approach, to know which one yields more reliable estimates. More specifically, the objectives of this study were :

1. to estimate the growth rates of the total national income and of its components for the Punjab State ;

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[1] Kahlon, A. S. and H. S. Bal, 'Factors Associated with Farm and Farm Family Investment Pattern in Ludhiana (Punjab) and Hissar (Haryana) Districts', Dept. of Economic & Sociology, PAU, Ludhiana, 1971 (Mimeo).

[2] Lange Oskar, 'The Theory of Multiplier : Econometrica II : 227-45.

[3] Mirakhor, Abbas and Frank Orazem, 'Importance of the Farm Sector to the Economy : a Multiplier Approach. Am. J. Agri. Econ. 50 (4) : 1968, 913-20.

2. to study the relative shares of different components towards the total national income during different years ; and
3. to determine the predictive equations by using multiplier approach and compare these with the growth equations.

Methodology

The data separately for the primary, secondary and tertiary sectors were obtained from the Statistical Abstracts of Punjab.[4] Information on national income, both at current prices and at 1960-61 prices, was recorded. The primary sector income was taken as the farm income and that of the secondary and tertiary sectors was added to get the non-farm income.

From the data of total national income, farm income and non-farm income, various growth rates were determined by the formula :

$Y = ab^t$ where $r = (b\text{-}1)100$

Farm income-total income and non-farm income-total income multipliers were derived at current and at 1960-61 prices on the same lines as developed by Mirakhor-Orazem.[5]

These multipliers are :

1. Farm Income-total income multiplier : $\lambda_t = \frac{Yt}{YFt}$
2. Non-farm income-total income multiplier : $\mu t = \frac{Yt}{YNFt}$

Where λ and μ were the farm income-total income and non-farm income-total income multipliers, Yt was total income during year t, YFt was farm income during year t and $YNFt$ was non-farm income during year t.

The following predictive equations were developed in order to predict next years' income based on the past observations of farm income, non-farm income and total income, growth rates and the relevant multipliers :

1. Total growth rate equation :
   $Yt = ab^t$

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[4] Government of Punjab, Statistical Abstracts of Punjab, Economic and Statistical Organization, Various Issues.

[5] Mirakhor and Orazem, op. cit.

2. The sum of the growth rates of farm and non-farm incomes :

$$YF_t=a_1b_1^t$$

$$YNF_t=a_2b_2^t$$

$$Yt=YF_t+YNF_t=a_1b_1^t+a_2b_2^t$$

3. Lagged equation : $Y_t=a+bY_{t-1}$

4. Based on farm income-total income multiplier :

$$YF_t=a_1+b_1YF_{t-1}$$

$$\lambda_t=a_2+b_2\lambda_{t-1}$$

$$Y_t=(YF_t)(\lambda_t)$$

$$=(a_1+b_1\ YF_{t-1})(a_2+b_2\lambda_{t-1})$$

5. Based on non-farm income-total income multiplier :

$$YNF_t=a_1+b_1\ YNF_{t-1}$$

$$\mu_t=a_2+b_2\mu_{t-1}$$

$$Y_t=(YNF_t)(\mu_t)$$

$$=(a_1b_1YNF_{t-1})(a_2+b_2\mu_{t-1})$$

Growth Rates of National Income

The growth rates of farm income, non-farm income and total income, both at current and at 1960-61 prices are given in table 1. It can be seen from table 1 that there was not much variation in the growth rates determined at constant prices. All of these were about 6 per cent. However, the growth rates determined at current prices varied between 12.54 per cent and 17.84 per cent. The growth rate of farm income was higher than that of the non-farm income. It was due to the phenomena of farm prices increasing at a relatively higher rate as compared with other prices. All the growth rates were significant at 1 per cent level.

Table 1

Growth Rates of National Income of Punjab, 1960-61 through 1970-71

Income	At current prices	Constant prices
Farm Income	17.84	5.93
Non-farm Income	12.54	5.95
Total income	15.49	5.85

Note: All the growth rates were significant at 1% level.

Multiplier Approach

The farm income-total income and non-farm income-total income multipliers both at current and at 1960-61 prices for the Punjab economy during 1960-61 through 1969-70 are given in Table 2.

Table 2

Multipliers

Farm Income-Total income and non-farm income-total income multiplier for Punjab, 1960-61 through 1969-70

Year	Current Prices		1960-61 Prices	
	Y_t/YFt	Y_t/YNF_t	Y_t/YF_t	Y_t/YNF_t
1960-61	1.79	2.26	1.79	2.26
62	1·84	2.19	1.87	2.15
63	1.89	2.12	1.92	2.08
64	1.93	2.08	1.82	2.22
65	1.87	2.15	1.69	2.44
66	1.94	2.06	1.83	2.21
67	1.89	2.12	1.61	2-64
68	1.82	2.24	1.59	2.70
69	1.83	2.21	1.60	2.67
70	1.83	2.21	1.63	2.59
Average	1.86	2.16	1.74	2.40

Farm income-total income multiplier at current prices varied between 1.79 and 1.94, the average multiplier being 1.86. The non-farm income-total income multiplier at current prices was the highest in the year 1960-61 and lowest in 1965-66, average multiplier being 2.16.

The farm income-total income multiplier at 1960-61 prices was increasing up to 1962-63 when it was 1.92. Thereafter, it started declining and reached 1.58 during 1967-68. It shows that during this period the prices of agricultural commodities were increasing at a faster rate than the increase in agricultural production. After 1967-68, the farm income-total income multiplier started increasing due to higher growth of agricultural production owing to the introduction of high yielding varieties of various crops. The average farm income-total income multiplier was 1.74. Thus during the decade 1960-61 to 1969-70, Rs. 1.00 of farm income generated on the average of Rs. 1.74 of total income each year.

The non-farm income-total income multiplier at 1960-61 prices showed the opposite trend. It was the lowest in 1962-63 being 2.08 after which it started increasing and reached the highest in 1967-68 at 2.70. The average non-farm income-total income multiplier was 2.40.

Predictive Equations

Various predictive equations for estimating the total national income of the Punjab economy were estimated by using the growth rate equations, lagged equation and the sectoral multipliers. The predictive equations at current prices are given in table 3.

Table 3

Predictive equations for total income at current prices

a) Total Income Growth Rate :

$Y=ab^t$ $\quad X^2=19.7672$

$Y_t=(328.77)(0.0629)^t$ $\quad R^2=.9838$

b) Farm Income growth rate+Non-farm income growth rate :

i) $YF_t=(170.81)(0.0713)^t$ $\quad R^2=.9632$ $\quad X^2=19.6663$

ii) $YNF_t=(159.59)(0.0513)^t$ $\quad R^2=.9986$

$Y_t=(170.81)(0.0715)^t+(159.59)(0.0513)^t$

c) $Y_t=a+b\ Y_{t-1}$ $\quad R^2=.9669$ $\quad X^2=76.4409$

$Y_t=26.604+1.1083\ Y_{t-1}$

d) i) $Y_t=(YF_t)(\lambda_t)$

$YF_t=36.56+1.0724\ YF_{t-1}$ $\quad R^2=.9243$ $\quad X^2=48.4685$

$(.1160)$

ii) $\lambda_t=0.62+0.6334\lambda_{t-1}$ $\quad R^2=.3751$

$(.3097)$

$Y_t=22.6672+6649\ YF_{t-1}+23.1571\lambda_{t-1}+0.6795\ YF_{t-1}\ \lambda_{t-1}$

e) $Y_t=(YNF_t)(\mu_t)$

i) $YNF_t=-6.8005+1505\ YNF_{t-1}$ $\quad R^2=.9983$ $\quad X^2=30.7969$

$(.0183)$

ii) $\mu_t=0.80+0.6801\ \mu_{t-1}$ $\quad R^2=.4424$

$(.2886)$

$Y_t=5.4526+0.9225\ YNF_{t-1}-4.6250\ \mu_{t-1}+0.7824\ YNF_{t-1}\ \mu_{t-1}$

It was found that the coefficient of multiple determination, R^2, for the lagged equation (*c*) was lower (0.9669) than that for the total income growth rate equation (0.9338), thereby showing that the latter equation was more reliable than the former one. In the growth rate equations, separately for the farm and non-farm incomes, the coefficient of multiple determination was higher in case of non-farm income due to greater control over production in response to changing prices. It was also higher than that for the total income growth rate equation. The overall reliability of the predictive equation, as shown by chi-square values, obtained by adding the separate growth rate equations was a little higher than that of the single total income growth rate equation.

In case of predictive equations developed from the multiplication of sector income lagged equations and the sector multiplier lagged equations, the reliability as indicated by chi-square values was more than that of the total income lagged equation, but less than those given by the growth rate equations. Sector-wise comparison of the predictive equations showed that the one estimated from the non-farm sector data was more reliable than the one estimated from the farm sector data. Again, it could be explained due to consistent increases in industrial production and industrial prices as compared to greater fluctuations in the prices and production of agricultural products.

Predictive Equations for Total Income at 1960-61 Prices

In order to eliminate the effect of fluctuating prices so that the behaviour of the national income in direct response to changes in physical production only could be sorted out, the predictive equations for total income at prices constant at 1960-61 level were estimated. These are given in Table 4.

Table 4

Predictive equations for total income at constant prices

a) **Total Income growth rate**

$Y_t=(37.80)(1.0585)^t$ $\quad R^2=.9695 \quad X^2=4.4734$

b) **Farm Income growth rate+non-farm income growth rate**

i) $YF_t=(200.64)(1.0593)^t$ $\quad R^2=.9031$

ii) $YNF_t=(170.85)(1.0585)^t$ $\quad R^2=.9770$

$Y_t=(200.64)(1.0593)^t+(170.85)(1.0595)^t$ $\quad X^2=4.5809$

c) $\underline{Y_t=a+b\,Y^t_{-1}}$ $\quad R^2=.9384 \quad X^2=7.4240$

$\underset{(.1078)}{Y_t=-26.63+1.1127\,Y_{t-1}}$

d) i) $Y_t=(YF_t)(\lambda_t)$

$YF_t=-12.7424+1.1063\ YF_{t-1}$ $\qquad R^2=.8595 \qquad X^2=11.4464$

ii) $\lambda_t=1.2387+0.3398\ \lambda_{t-1}$ $\qquad R^2=.1495$

$Y_t=-15.7840-4.3298\ \lambda_{i-1}+1.3704\ YF_{t-1}+0.3759\ YF_{t-1}\ \lambda_{t-1}$

e) $Y_t=(YNF_t)(\mu_t)$

i) $YNF_t=17.06+1.0348\ YNF_{t-1}$ $\qquad R^2=.9626 \qquad X^2=24.3572$

$(.0771)$

ii) $\mu_t=1.38+0.3544\ \mu_{t-1}$ $\qquad R^2=.1570$

$(.3014)$

$Y_t=23.5428+1.4280\ YNF_{t-1}+0.0461\ \mu_{t-1}+0.3667\ YNF_{t-1}\ \mu_{t-1}$

The closeness of observed and expected total income values for various years in case of different predictive equations, given by chi-square values, when compared with those in the predictive equations at current prices, showed a remarkable improvement. All the chi-square values declined.

Again, the coefficient of multiple determination in the total income growth rate equation was 0.9695 which was higher than that in the lagged total income equation (0.9384), thereby showing that the total income growth rate equation was more reliable. The R^2 was again higher in case of non-farm income growth rate equation than the total income growth rate equation (0.9770). The R^2 in case of farm income growth rate equation being relatively less than the R^2 in the total income growth rate equation, the overall predictive equation from the sum of the separate sectoral income growth rates yielded chi-square greater than in case of total income growth rate.

In case of multiplier approach the predictive equations showed the opposite trend. The estimates of chi-equations showed that a greater reliability could be placed on the predictive equation estimated from the analysis of farm sector data.

Projected Per Capita Real Income

The total and per capita income projections from various predictive equations were made for the last years of fourth and fifth five year plans viz., 1973-74 and 1978-79 respectively. These projections were made only for prices constant at 1960-61 level. (Table 5).

Table 5

Total and per capita income projections from various predictive equations at 1960-61 prices

uation	1969-70		1973-74		1978-79	
	Total	Per capita	Total	Per capita	Total	Per capita
A	661.92	501	830.98	512	1104.40	704
B	661.29	500	832.88	584	1111.22	708
C	676.82	512	917.21	643	1397.70	891
D	688.25	521	934.32	655	1480.57	199
E	677.43	513	909.23	637	1273.75	812

The projections made from lagged equation and the two sector income lagged equation times sector income multiplier lagged equation were higher than those from the growth rate equations. The conservative estimates of real per capita income as given by the two growth rate equations were Rs. 582/- from total growth rate equation and Rs. 584/- from the sum of the growth rates of the two sectors by the end of the Fourth Five Year Plan. Similarly, by the end of the Fifth Five Year Plan, it was estimated that the real per capita income would reach a level of Rs. 700/-.

(Continued from page 220)

100 and the budget being exhausted. But on the critical study of the Table, the projects *Y* and *Z* could be accepted with a combined NPV of 130 for the same cost. To avoid this difficulty the projects should be ranked according to 'benefit-cost ratio' at the pre-determined discount rate. The same ranking is also observed when the projects are put according to the ratio of 'excess of benefits over costs with the total cost of the project' itself—

$$\text{viz. } \frac{B\text{-}K}{K}$$

Thus, to sum up the pros and cons of the different methods which can be employed for the purpose of comparative economic analysis of different projects, it is claimed that the NPV method is superior to the IRR method because the former clearly expresses the total net benefits expected from a project. Also what may be of more concern is the size of the project and the total volume of net benefit it generates rather than merely maximising the Internal Rate of Return.

A Note on Dutch Tea Auction System

· Himansu Roy

Of late there is a renewed interest in criticizing the present English System of Tea Auction (ESTA) on the ground that it suffers from a remarkable degree of concentration as a result of which teas are retailed in India and abroad at "200-300% higher prices than what the producer gets at the auctions." Tea producers, especially the medium and small ones, strongly hold that the ESTA should be freed from the linkage of concentration. In this process of thinking a suggestion has come from a one man commission appointed by the Tea Board in November 1972 that the Dutch System of Tea Auction (DSTA) should replace the present ESTA.

Dutch System

In DSTA the buyers sit at desks facing a clock-like dial on which prices are indicated. Every few minutes the hand of the dial moves from a higher to a lower price. As soon as the intending buyer presses the button attached to his desk the clock stops and the lot goes to him at the price indicated in the dial. It is expected that the most eager buyer will push the button at a price which is "just about the highest he is willing to pay, and secondly, he cannot take the chance of a fall in price lest he loses "the cow". It comes then the price the most eager buyer is willing to pay is equal to the price he actually pays. That is there cannot be any "buyer's surplus", it is being "appropriated" by the seller (producer) and the price is determined at his bid. But in the case of ESTA the things are exactly opposite. The bids rise from lower to higher prices and 'the most eager buyer" more often than not actually pays a price lower than he is willing to pay and thereby "appropriates" the "buyer's surplus" leading to a low level of wholesale price and a wide price differential between the wholesale and retail prices.

* Calcutta.

The principal objective of DSTA is to mechanically force a buyer to forego the "buyer's surplus" in favour of the producer which is due to him. The mechanism works provided (i) "the most eager buyer" is determinable ; (ii) he does not know what prices the other buyers are willing to pay ; and (iii) the object of purchase is "the cow", i.e. something which is very limited in supply. We have then to examine whether "the most eager buyer" is determinable, a buyer may know what prices the other buyers are willing to pay, and, if the supply of tea is normally very limited.

Untenable

In DSTA "the most eager buyer" may not press the button first. For, where the supply is fairly elastic, if he presses the button next he may have a considerable margin of "buyer's surplus". If this argument is developed to its logical end it will mean a situation for the buyers to compete to buy "next", which is beyond the expectation of the DSTA. Such idea develops because of the methodological error in the concept of "buyer's surplus" in DSTA in that the price the buyer is willing to pay and the price he pays are simultaneously determind by him. To him the "buyer's surplus" is not measurable. He will try to measure it by the price offered by the next most eager buyer, and as he cannot afford to give away the "buyer's surplus" he will prefer to buy *next*. This is however an impracticable position in the aggregate, i.e. defer all buyings to the endless "next".

The practical proposition for an imperfect market as of the form of oligopsony is that "the most eager buyer" whose activity alone can only create an impact on both auction and consumer market is the price leader. The other buyers will be the price-followers. In a system where all the buyers are being pressed by a mechanical device to give up the share of the "buyer's surplus" they are also likely to come to certain price understanding in the nature of "collusion". The characteristics of tea provide a very favourable climate for either. Tea plants begin to bear some 4-6 years, in some cases even a longer period, after they are being planted. The supply is sure to rush in when the new plants begin to bear. Further, supply may be increased considerably in short period through manipulation of the process of production. Still further, tea is a perishable commodity. It cannot be warehoused for any period of time in expectation of higher prices. And most teas are of common sorts, i.e, save in extremely rare cases any two qualities of teas are substitutable. On the other hand, demand for tea is unpredictable ; being very largely habit determined it increases normally at a rate lower than the rate of increase in production/supply. It is obvious that the greater the supply the more will be the competition among the sellers to sell and the larger will be the margin of "buyer's surplus", and still more large will it be if there is a price leadership or "collusion".

The advocates of DSTA point out that the system eliminates the brokers and the purchases are "open to all"—big and small alike. The tenders will come as a matter of "sealed covers". The technical device is such that no two persons will have any time to enter into any "collusion". But "collusion" does not refer to any place or time. It may take place and usually takes place outside the "market place" at any time depending on the force of inducements of mutual benefits. The initiative for such "collusion" is very likely to come from the leader himself as he will gain more by a "collusive price". For this price will be much lower than the price he will be willing to pay in order to accommodate the close rivals. It may still be pressed that the small buyers will not be the price-followers, but, as it goes, the price-pushers. But if the bigs among the small buyers refuse to become "the most eager buyers" then the smaller ones will run the risk of buying at higher prices and selling in the common consumer market. If they accept the authority of the bigs to be "the most eager buyers" then logically all shall have to accept the leadership of the biggest among them. If all like to behave as one, the "collusion" will be the result. That is, in whatever way it is considered the price-pushing intent and strength of the small buyers are extremely limited, and in no way their giving away of any portion of the "buyer's surplus" to the producers will create any appreciable impact on the latter's profit levels. In a word, tea is such a commodity and the auction is such a place that its buyers are under no constraint to enter into a keen competition for its procurement.

Tea may be procured from alternative sources. This is highly significant. For re-selling in internal market tea can be purchased not only in auctions but also from tea gardens at negotiated prices. Thus, there can be two prices for the same sort of tea. But the DSTA presupposes one market—the auction itself—and one price for the same quality of tea at a given time or bid. Besides, while the DSTA presupposes the "appropriation" of the buyer's surplus" by the seller (producer) the direct purchase from the tea gardens implies that it is being divided between the buyer and the seller (producer). If the buyer is given the alternative to forego the "buyer's surplus" or divide it with the producer he will certainly prefer the latter. A producer will also prefer such division for he is under the all-time pressure of competition to sell, uncertain about the prices of his teas in the auctions, and will not like to induce the (big) buyers to enter into a "collusion" or the like. Above all, some big producers having interest in buying at lower prices will find this alternative source of selling more certain and profitable.

Save for some special quality teas, if any at all, the foreign buyers have alternative sources of procurement. They may buy from any of the tea exporting countries and, again, from the auctions or the gardens. They may buy in London Auction as well. The world tea distributors, few in number, are well organised while the world principal tea producing countries are not. The mechanism of DSTA to force the buyers to forego the "buyer's surplus" may therefore be resulted in making the foreign buyers leave the Indian tea auctions for alternative sources. It may be so viewed that they have to buy Indian teas in order to meet the absolute "demand gap" which cannot be met otherwise. So far, perhaps, so correct. But it cannot be carried too far. India can make the world tea prices shoot up by her non-supply but she cannot dictate the prices by normal supply. Then, again, tea is always in stock, in the pipeline, on the floor of the auctions and on the plants in bearing. There is also the lagged demand for tea. It has close substitutes too. In short the buyers can wait but the sellers (producers) cannot. In order to punish the buyers the producers vis-a-vis the industry will be punished more. The danger may come through another channel. If the buyers are stripped off the "buyer's surplus" in auctions they may try to maximise monopoly (or oligopoly) profit in the consumer market by selling less. This will raise the retail prices still higher and make the expansion of production almost impossible.

Conclusion

Tea suffers from oligopsony (nearing monopsony) in the wholesale market and oligopoly (nearing monopoly) in the consumer market. So long as this "oligo" persists any attempt to improve the tea marketing system will be nothing more than marginal. The "oligo" should go. With this end in view the tea market should be dynamically restructured in the light of new knowledge and values. This is an economic problem. DSTA attempts to provide a mechanical solution for an economic problem. This is not possible. For an economic problem can be solved only by economic measures.

UTTARPARA

ECONOMIC AFFAIRS

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Second Budget

Expectedly comes the second Finance Bill. It proposes to pick up Rs 231 crores from the market by way of taxing such articles as cotton fabric, cotton yarn, tyres, cement, steel, cigarettes, copper and copper alloys, unwrought zinc, lighting bulbs and tube lights, paper and paper board, plastics, paints and varnishes, and interest earned by banks. In his speeech the Finance Minister states (i) the economy is in a desperate situation that deserves a determined grappling, (ii) the Government has failed to arrest inflation as such and the expection of inflation—over the three months April to June 1974 the rise in general price level was 7.8% or an average monthly increase of 2.6% as against however the monthly increase of 2.7% during January to March 1974, (iii) the price pressure is the result mainly of sluggishness of agricultural production and the consequent hoarding, (iv) there is stagnation in industrial production since 1973, (v) all these caused a sizable imbalance between demand and supply, (vi) as a result the Government has to come forward with three recent Ordinances involving temporary restrictions on declaration of dividends, immobilization of 50% of additional dearness allowance and increase in wages and salaries, and compulsory deposits of income-tax payers in higher income groups, (vii) not being sufficient the Government now faces the only other way to cut drastically the development expenditure which will undoubtedly entail severe adverse effects on the future growth of the economy, (viii) Reserve Bank of India has tightened the credit controls, instructed the banks to scrutinize the top 50 accounts to ensure that the bank credit is not used for excessive accumulation of inventories or diverted to non-productive purposes, and increased the bank rate by 2% accompanied by an increase in both the minimum lending rate and deposits rates of commercial banks, (ix) but the imbalance can be removed only by a sustained increase in agricultural production which seems to be an impossible task, (x) foreign exchange reserve is fairly well but a good percentage of it is spent for imports of foodgrains at a high cost, (xi) very high costs of production of exportable items may threaten the viability of the country's balance of payments, (xii) it will not possible to contain the 1974-75 budgetary deficit to Rs 126 crores, and (xiii) this has made him to increase revenue by further taxes as embodied in the second Finance Bill.

It comes then all rests on the increase in agricultural production and the others are the complementaries. This is superfluously correct. For each complementary has its own complementaries and none is neutral, each creates problems for its own and for others. Thus, the freeze of 50% of additional dearness allowance allowing the consequential rise in costs of production may be effective only if the complementary (i.e., asumption) that excess money to spend on consumption lies with those consumers whose dearness allowance has been so freezed. This is unrealistic to assume. As a result recession may threaten the producers, although prices in black market may show a steep rise, the inventories having been at a very low level. A recession not of inventory surplus but of inventory below the normal mark. If agriculture is the pivotal point, as the Finance Minister himself points, there is no escape from the four-bar that exists now. A pause in agriculture must mean a pause in all other sectors, however triflingly it is admitted. To be brief, the economy is in the hands of scarcity. This is the reality and it cannot be broken by measurement of cost push and demand pull inflations or any measures taken at their suggested paths.

The second budget taxes will go to push up the prices. There cannot be two opinions on it. The revenue has been shown to rise by arithmetical calculation but nothing has been deducted against it. This is irrational. If at least "subsidy" and "relief expenditure" are deducted, it may come down to a negligible amount. This camouflage may be needed by the Finance Minister in his desperate attempt to contain the first budgetary deficit to a presentable limit. But this is not a measure that may go to help the economy to stand on its two legs. And the Finance Minister shall have to justify why he has given a booster to price rise when the Government boasts of itself that its package anti-inflation measures have been directed to curb the rise in prices. This contradiction in principles and deeds and the repeated exercises of the conventional methods against the typical maladies of the economy's growth with justice signify practices without precepts and prospects.

Review

Without Fear or Favour, Frank Moraes, Edited by R. C. Cooper, Vikas Publishing House Pvt. Ltd., Delhi, Price Rs 24.00.

Mrs Indira Gandhi's sudden rise to power is dramatic. Her father, Jawaharlal Nehru, did his best to intrude her in the country's high politics. But it was not much for public notice for such thing is generally taken as the privilege of the Indian public leaders. It was however not the key of her road to power. The time was ripe by 1969 for a "forward-looking" leadership for the country as the people had long spiritually discarded the Syndicate-led corrupt leadership of the Congress. Ironically, the Syndicate initiated the acceptance of Mrs Gandhi as a compromised leader in the form of Prime Minister to project the socalled image of Nehru to the people and make her the instrument of its ugly games till its own man could be placed in that position. But much to the dismay the Syndicate and the thinking people witnessed Mrs Gandhi's breaches of democratic niceties to split the Congress in quest of lust for power. The Congress was split by her manoeuvring and her survival as the Prime Minister was possible by the help of Soviet-led communists in the Parliament. The people accepted her rise to power not to find in her a dynamic democratic nationalist identifiable leadership but in a frustrating mood to find the Syndicate in graveyard and just for a change which they believed could not be, as there was nothing left to be, worse.

Mr Frank Moraes frankly expresses himself as a democrat and non-commnuist. In his own stylish ways he has reviewed what happened in India from 1969 to 1972—from Mrs Gandhi's struggle for power to India in 1972—with deep insight and logical analysis of facts and trends a quality which is rarely found in professional journalists. Straightforward as he is he poses in uncertain words whether "India is ruled from New Delhi or Moscow". This may be a contentious issue but truth is likely to be in his favour. Similarly, one may not like the manner of his presentation of facts but cannot reject him when he writes, "It is not the Prime Minister's policies so much as her motives and methods that arouse disquiet and distrust. For only when her personal political position was threatened did she go into a whirligig of manoeuvres to outwit and outflank her opponents, the blitzkrieg being spearheaded by the nationalisation of banks in which for four years she had shown small interest or concern." He has rightfully pointed out the sinister motive of the ruling Congress to destruct the democratic fabrics of the country by its theory of committed civil service and judiciary which has recently taken a very ugly shape. His apprehension of gagging the liberty of press and monopolising the All India Radio for Mrs Gandhi's party and personal propaganda is not unfounded by facts. Concerning himself with the "Murder of Democracy" Mr Moraes has given the call, "Democracy is in peril today". And has reminded the people that "The first lesson of contemporary history is that he who plays with Communists plays with fire". He is correct. Equally he is correct that Mrs Gandhi resorts to Ordinance Rule to bypass the Parliament. He illustrates, among others, President Giri's putting the official seal on the unprincipled imposition of President's rule in Uttar Pradesh on the sacred soil of Soviet Russia during his stay in Kiev. He has also discussed who finances the ruling Congress. So much confident Mr Moraes is that he puts in writing: "It is the Association of Industrialists which collects the money from individual members. The representatives of the business associations pay their money to the ruling party." On the myth of "Garibi hatao" he compares the incomes of the socialist ministers of Mrs Gandhi with that of the commonman. The taxable income of a minister is Rs 448000 per year while the average yearly income of an Indian in Rs. 319.3 at 1960-61 prices. Mr Moraes is less sceptical and more depressed by USA's reservations on Moscow's raping Czecholovakia as the corollary, of the hindsight Yalta and Potsdam agreements on "spheres of influence" but seems more sceptical and less depressed by Mrs Gandhi's going down the Volga. For he finds her decisions are the decisions of Kremlin: "New Delhi spoke out of turn when initially it suggested the reactivation of the International Control Commission after the Cambodian crisis. Moscow said no, and with New Delhi, to hear is to obey. It also immediately said no,...Moscow frowned on the Djakarta conference, dismissing it as American-oriented. To hear was again to obey. India abstaind from the conference on the ground that it was one-sided". Mrs Gandhi denies she has any track with the communists. But reality says otherwise. Mr Moraes then in a desperate temper puts up the question "Who is on the side of a democratic India?" This is undoubtedly the issue of the day.

Mr Moraes harshness in dealing with facts and drawing conclusions may not be liked by many but that does not matter for what he means to say. The truth is with him.

The Nature and Pattern of Economic Growth in the Fifth Plan of India—II

Ranen Ghosh*

(e) One of the two most important objectives of the Fifth Plan is to achieve self-reliance. For the first time, this objective was explicitly formulated in the Third Plan of India. If means elimination of special forms of external assistance. In the Third Plan it was observed that self-reliance could not be achieved forthwith ; the Fourth Plan tried to concretise the time phasing for realising the goal of self-reliance ; the objective was to reduce foreign aid, net of the debt servicing (inclusive of interest payment), to half of the current level by the end of the Fourth Plan and to eliminate it altogether as speedily as possible thereafter. [Govt. of India, 3(a), page 12]. In the document 'Towards an Approach to the Fifth Plan', it was observed that self-reliance will be carried a step further during the Fifth Plan period by reducing the net aid to zero in the terminal year 1978-79. The implementation of this objective of self-reliance in the Fifth Plan will have far-reaching effects on the growth of the Indian economy. The over-all growth-rate may be set at a lower-figure, so that external aid is minimised. But this would affect adversely the horizon of long-term growth-paths It all depends on the present degree of indispensability of foreign aid in the implementation of development programme. It should be an encouraging phenomenon in the Indian economic planning. if the planners can implement what they set for in the field of self-reliance. Apart from the feasibility of high growth-rate and the reduction to zero of net foreign aid in the terminal year of the Fifth Plan, the variation in growth rate has differential effects on various industries. The impact of a lower growth rate is more severe on the key and basic industries which are the prime-movers of the growth machine. The strain on balance of payments comes from two sources : heavy debt service obligation, and maintenance of imports (which constitutes about 80% of total imports). The Fifth Plan observes that the situation can be tackled with some effective means and maintains a higher rate of growth as well. Import substitution is one of the important means : accelerated creation and fuller utilisation of capacity in the relevant fields—steel, non-ferrous metals, fertilizes, crude oil, petroleum products, engineering ancillaries and basic chemicals. Efforts for consolidating self-sufficiency in foodgrains and for the increase in production of cotton and oil seeds must continue. Reduction in inequality and self-reliance are positively correlated. If the consumption of the poor people rises relatively to that of the rich people, this will lead to reduction in imports (of foodgrains), since foodgrains, which form a major part of the consumption expenditure of the poor people, are no longer to be imported, whereas the consumption of the rich people includes items which have high import contents. This argument in the Fifth Plan document is really a de facto statement and is not a policy statement. Self-reliance is also to be aimed at by reshuffling of domestic technology. There may not be great scope in changing pattern of technology in the short period. An effort is to be made to increase the proportion of domestic technology relative to the increase in imported technology. And, 'I do not see why we should copy the technology which prevailed in mid-fifties of this century, whereas the current technology is already available to us. Modern technologies are bound to be less costly than the by-gone technologies'. [Ghosh, 2, page 91].

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If a change in the mix-up of domestic and foreign technology is implemented within the Fifth Plan period, it will change the technology matrix of the input-output analysis to some extent, at least. If so, the growth-rates for individual sectors cannot be what they remain in the terminal year where the technology matrices are given at the start of the period and are held constant during the Fifth Plan period. I think some time-patterns of changes in the technical coefficients are to be envisaged, although, as I point out in Section 2, the model will have differential/difference equations with variable coefficients, thus introducing more complications in its mathematical manipulation. However, the time-forms of the technical coefficients can be feasibly taken as simpler functions of time, thus accommodaring practical realities of the economy.

Export promotion is also a vital step in realising self-reliance, so speaks the Fifth Plan. This is a valid argument if it means that

(Continued on page 360)

Foodgrains Prices Policy in India

S. S. Johl*

In an economy ridden with scarcity it is a pre-requisite that the primary producer is provided with appropriate incentives to make him produce more and better. Production can be increased on extensive or/and intensive margin. In a situation of land-short economy, particularly in respect of irrigated land, emphasis needs to be placed on intensive cultivation. This could be done through intensive use of non-conventional inputs and better management of the input-use. After mid sixties new crop production technology increased the absorptive capacity of major crops such as wheat and rice for fertilizers, demanded more intensive and rational use of irrigation as well as labour and required better management. We could, therefore, manage the situation from the side of inputs. The producer in the ultimate analysis is interested in net returns. The same level of net returns can be achieved at higher or lower input and output prices. In case of higher input-output prices, however, we raise the height of the financial ladder, to which it is difficult and often impossible for the weaker and smaller farmer to climb. In this situation bigger farmers gain directly proportional to their marketed surplus, which in turn is an exponential function of the size of the holdings. Through higher output price, we have been thus helping primarily the bigger farmers to enable them to reap fortunes. Through the consequent rise in input prices, financial ladder has been perched higher and higher for the smaller farmers. Input prices over the past seven years increased by over 47 per cent which is a significant drain on farm resources, especially those of the smaller farmers. No wonder, therefore, input use would have declined on small farms during the beginning of seventies. The index number of input prices with base 1967 increased from 101.53 to 146.61 in 1973 and agricultural commodities price index increased from 112.46 to 131.87 in this period. For the agricultural sector as a whole the price-parity changed un-favourably from 111.23 per cent to 90.14 per cent during this period. Thus whereas the gap between input prices and output prices has been narrowing down continuously, the narrowed down profit margins have been possible only with higher and higher capital investments, making it more difficult for the smaller farmers to reap the advantage of higher output prices. On the other hand for the consumers (including the rural and urban consumer) the inflationary pressures mainly generated by excess of money supply, unproductive Government expenditure and public sector inefficiencies have been eating into the vitals of the family budgets. The higher output prices directly and indirectly strengthened these inflationary forces further against the consumer and increased the input prices beyond the reach of small farmers.

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An appropriate policy at the beginning of the period of technological break-through, therefore, would have been to control and even subsidize the input price and discipline the seasonal variations in output prices, which were the main cause of the distress to the producer-sellers, especially the small farmers. With this approach, the farmers would not have suffered on the net profit margin, the smaller farmers would have gained through an easy access to the inputs, consumers would have been spared the pangs of suffering from inflation and industry could have picked up through the influence of cheap wage-goods, less costly raw material and to some extent through direct subsidy on price of agricultural inputs they produced. Above all financial requirements of managing the system could have remained low and would have not necessitated the undue expansion of money supply we are suffering from today.

We, however, decided to handle the output prices. This lead to development of inflationary forces. Prices of wheat, for example, which prevailed between Rs. 46.00 and Rs. 50.00 per quintal in the post-harvest period of 1964-65 increased to between Rs. 63.00 and Rs. 70.00 in 1966-67 and Rs. 76.00 in 1967-68 under the new price-procurement policy ; the prices were held at that level till 1972-73. In 1973 with a bonus of Rs. 8/- per quintal prices for the producers were raised to Rs. 84.00. The situation with respect to other crops such as rice, maize, jowar, bajra was not very different. Prices of other commodities such as gram, pulses, oil seeds, gur, etc. also increased in sympathy. The parity between the agricultural commodities got upset because of general inflationary situation and diverson of area from other crops to wheat and rice, thereby reducing production and supplies of these commodities in the market.

There was a persistent demand by the producers for increasing the prices further. Indirectly it was acceded to through the devices of bonus provided to the producer-sellers by the State Governments in the producing areas. The actual prices paid to the farmers thus kept increasing. Under the influences of increasing adoption of improved production technology, increasing production and near self-sufficiency conditions (or at least the impression thereof) as well as lower level of international prices helped in containing the procurement prices especially of wheat at the level of 1967-68 up to the year 1972-73. The consumer was, however, supplied wheat at Rs. 78.00 per quintal in spite of the prices paid to the producer at Rs. 76/-, though it was costing the Government agencies from Rs. 24/- to Rs. 26/- per quintal on an average to handle this wheat. Thus, there was an element of subsidy of Rs. 22/- to Rs. 24/- per quintal which could be partly set off through lower prices of imported wheat. Although it was not visible under the climate of easy food situation at home and availability of foodgrains at a low price in the international market, the direction to which we moved and the path which we treated were essentially those of inflation and rising costs.

Even the Agricultural Prices Commission did not take full cognizance of this situation. Premature export prospects were being talked about. Adhocism was obvious in these reports. At the policy level, even these Agricultural Prices Commission reports were set aside while making political decisions on procurement prices. It was more of a horse-trading, rather than a comprehensive consideration of the long range developing economic forces, that characterized the decision making on procurement prices. We did not look beyond our nose, not to speak of 5 year or 10 year policy on prices, procurement and distribution. Food grain prices, those too of a few commodities, were the only segment in the total price matrix that was considered and in fact played with. It was not due to any cogent policy, but the comparatively comfortable availabilities of foodgrains, that prices of these foodgrains could be held low while the prices of other agricultural commodities and non-farm products and services kept mounting unabated. It was quite expected that this hold-up on prices of a few foodgrain crops would crumble down under the weight of inflationary forces any time as the situation on food front takes an unfavourable turn. So it did crumble down in the crop season of 1973.

Surprisingly agriculture was the only sector that was considered fit for a squeeze, probably believing that farmers were like 'sesame seeds',—harder you press then more oil they would yield'. Any time there was a demand from the farm sector or voice to support their demand for reasonable agricultural prices, they were labelled as Kulaks, and petty bourgeois by the urban controlled press, committed economists, and several psuedo-radicals. On the other side of the curtain, Government continued playing merrily with its inflationary policies. The public service sector alone which did not bring anything additional (services and goods) to the market got salary increase a multiple number of times a year. By 1972-73 money supply increased by Rs. 4393 crores over a total of only Rs. 4950 crores in 1966-67. Ratio of non-development expenditure to development expenditure also kept increasing during this period. On the food front matter came to head in April 1973 when Government, ill-advised, took over the wheat trade in a frustrating manner. Having a record of inefficiency in almost every sphere of their operations, it was surprising that Government decided to take over the trade in foodgrains without having even the minimum level of distribution machinery and the system streamlined. The scheme was bound to fail and it failed. It failed mainly on two accounts i.e. inadequate and inefficient distribution system and artificially depressed prices to the producers within the climate of all round mounting inflation. Whereas the producer prices were virtually kept at the same level, Government injected Rs. 1210 crores of extra money in the market in 1972-73 and about Rs. 1594 crores in 1973-74. As if it was not enough, general agricultural policy including lowered ceilings on land holdings and taxation measures created a climate of general uncertainty in the farm sector. Ironically, this was the only sector considered fit where amateur experimentation on social justice could be made. Income distribution in the rest of the economy including business houses was considered perhaps a secondary problem.

I believe the agricultural price policy could be tailored much better and more wisely even if we had decided to manage the output prices. Once an economy decides on handling the product prices it has to distinguish between primary production sector that brings commodities for sale in the market and the non-productive sector which provides the same services with same lavel of inefficiency and puts up almost nothing in the market to balance off the extra money injected into it. When the inflationary trends start developing the usual aggregative analysis handed down to us in the available body of economic theory does not work. Here we need to, per necessity, disaggregate productive and non-productive (I prefer to call it sterile) sectors. Productive sector prices can be increased to generate more products and non-productive sector contained or at least not allowed equivalent expansion to put a check on inflationary buying. Our policy, however, adopted exactly the opposite approach.

The logical alternative in a managed system, to repeat, should be to deal with the input prices, i.e. to control and even reduce the prices of inputs in order to introduce and strengthen anti-inflationary forces and bring these inputs within the reach of smaller and financially handicapped farmers. At this point of time, however, the choice in this direction is extremely limited, particularly in view of the increased costs of petroleum products, fertilizers and shortage of electric power. Reducing the input prices or even holding them to current level in the face of all round general price increase, otherwise ideal for making the price levels easier, may, in the present shortage situation, even enhance the demand for inputs which are already in short supply leading to their below optimal utilization. This would also involve a huge amount of subsidy. This option out, we are once again left with making adjustments in the output prices only.

No doubt the general price level is directly influenced by the agricultural prices, particularly food prices, and this is the fear we tend to legitimise everytime. It can, however, be looked at from a different angle. There is a good deal of margin between the effective prices the consumer pays and what is given to the farmer. Even if the prices of agricultural produce increase handsomly for the farmer, this cushion is enough to absorb the push up effect of the price rise. The exploitation of the situation by the trade and inefficient public operations apart, there is no need even to subsidize transport of foodgrains from producing areas to the consumer areas as is involved in this year's budget proposals. In short, even if the agricultural product prices increase and subsidy on transport if removed there is a considerable margin between the consumer and the producer prices to absorb this increase in prices to the farmers. This, however, requires proper management, particularly of the distribution system in the country. One wonders why, for example, the public distribution should cost Rs. 25 to Rs. 35 per quintal wheat whereas prior to take over by the Government, trader costs were not more than Rs. 5/- per quintal and particularly when storage and transport costs have not increased dramatically. There is thus a considerable scope for allowing increased product prices to the farmer without much of an adverse effect on the general price level in the economy if the distribution system is managed properly. Increased prices to the farmer on the other hand would encourage him to produce more both on intensive and extensive margins. The increased supplies so obtained would considerably blunt the edge of demand and it would be helpful in easing the general price situation for the consumer. To allow a realistic price rise in agricultural products will be in fact a bold step to outstep the inflationary forces. This statement looks as contradiction to the accepted economic beliefs, yet I believe it would be equivalant to cutting a portion of green wood beyond dead portion to check the rot. Recent relxation of the hold of inefficient public sector on coarse grains, for example, has increased the price for the producer in the producing areas and decreased the same for the consumer in the consuming areas. New wheat policy is also showing a little favourable influence although it is premature to judge the direction of the influence at this stage due to an uncertain and shifting stand of the Government. It is important that this society lets its farmers survive to keep producing the vital agricultural products to arrest the forces of inflation. After all reasonable price incentives to the farmers to encourage them to produce more cannot be as deleterious to the economy as five times revisions of salaries in a year of the well-organized, vocal and influential employees, unprecedented increase in money supply and over-increasing proportions of non-developmental expenditure.

India is at a point today that her economy cannot afford to lose on the production front. Every farmer needs to be encouraged to increase production, particularly of rice and wheat on every field. We can ill afford even a marginal decline in our production particularly in the situation of acute food shortages. The problem is accounted and made more difficult to solve by soaring prices of inputs such as fertilizers, diesel oil and agricultural labour.

In the situation of a dire need to enhance domestic production there is little justification to hold the domestic prices for the producers artifically low particularly when the supply and demand forces in the domestic market would pitch up the prices even higher than the international prices. So long as international prices were lower than the domestic prices paid to the farmers, further increase in prices was probably not that justified. Now in a scarcity situation, when shortage of foodgrains is feeding the inflationary forces and supplies in the international market are prohibitingly costly, self-sufficiency in foodgrains, cannot be achieved through penalising but through encouraging the marginal farmers. In no shortage-economy endeavouring or aiming at self-sufficiency, prices to the producers are provided lower than the international prices. In an endeavour to hold down the inflationary pressures through holding the agricultural prices, we are re-inforcing the very situation we wish to avoid. The producer prices must be consistent with the demand and supply position in the domestic market and should have some relevance to the international price level.

So far we have been placing emphasis on the average cost of production on the supply side to legitimize the level of administered prices. The concept, however, does not lead us anywhere. Cost of production varies from area to area, from field to field, with persons, different levels of technology and variations in soil-climate conditions. Prices based on average cost of production might give relief to a small percentage of producers, may yield incentive to a few physically better placed and efficient farmers ; yet, this is an unremunerative price to a large number of producers whose cost of production is higher than the average cost of production.

It is desirable that the farmers are given rational price incentives particularly in respect of foodgrains ; yet the Government does not have the necessary capacity and will continue to shouldering their responsibility to manage prices and distribution of foodgrains in the public sector. The alternative of activating the trade is, therefore, a via media. On the one hand it amounts to abdicating in favour of traders, on the other it is a realization of the realities of the situation. There are four parties to the deal involved in this situation : (i) farmers who are interested in higher prices, (ii) consumers who are interested in their volume of business and profits, and (iv) Government interested in remunerative prices to the producer, reasonable prices to the consumers and mobilization of maximum agricultural surpluses. When the Government takes over the trade, it has to shoulder the responsibility of managing the price system with a precision to balance the objectives of the producers and the consumers, streamlining the distribution system at minimum costs and meeting the financial obligations involved which has proved to be unwieldly for the public sector for the present. If the operations are left to the traders, they would no doubt maximize their profits and may meet partially the objectives of the consumers and the producers. Yet, the experience shows, they tend to increase their margins between the consumer prices and the producer prices and thus leave both the producers and the consumers, particularly the poorer consumers, to suffer. In order to eliminate the vagaries of free trade, the Government decided to take over the trade in foodgrains in 1973 but failed to achieve the objectives in their first experiment with wheat. The new policy, therefore, emerged as an easier alternative. It has its strong points ; (i) the producers will have the favour of comparatively more free market, if it is allowed to operate in practice, (ii) traders will find their role defined if certain constraints are removed, and (iii) Government will appropriate marketed surplus for the vulnerable section of the community and for distress and calamity situations without having to shoulder an uphill task of managing the total distribution systems, prices and meeting huge financial obligations. This, in a sense, puts the Government in a commanding position wherefrom market activities and forces can be disciplined and marketed surpluses appropriated to at least partly meet the welfare objectives.

The policy announcements and intentions, however, need to be made unequivocally clear. In this policy-structure, concept of ceiling prices and zonal restrictions need to be carefiully reviewed. In the dual market, ceiling prices carry no logic. Under the new policy Government should have firm estimates of the foodgrains supplies it would require for public distribution and the prices at which this distribution has to be made. To leave the quantities to be procured flexible amounts to a drift of the Government from its welfare goals. There is nothing wrong in Government having decided on procurement/levy prices of Rs. 105/- per quintal. What needs to be made specific is the quantity the Government must procure. If fifty per cent levy, as at present, cannot make up the required quantities the percentage can be increased or imports have to be resorted to. For the rest of the produce there should be no price ceiling. The vulnerable section of the society is taken care of through the levy-produce and open market is meant for the comparatively better off section of the society. This system will be similar to the sugar market system except that levy produce will be available to the weaker section only through fair price shops. If however ceilings on prices even in the open market need to be imposed because of the fear of the undue manipulations of the trade (although I doubt the propriety and feasibility of ceilings even in that situation) it should be consistent with the market situation ; domestic and international. The ceiling prices so stipulated will have to be strictly enforced with a strong hand, because under weak implementation the trade will have an absolutely free hand and might manipulate the domestic open market prices beyond even the international market prices. This will directly and indirectly put more pressures for public distribution system and the limited quantities of foodgrains procured might turn out to be grossly inadequate. Strict enforcement of such a ceiling price and strong measures against excessive hoarding are a necessary accompaniment of such a policy, otherwise the system will crumble down once again and perhaps with a louder thud.

On the other hand, as is presently the case with the wheat policy in Punjab, delays in issuing licences to the traders, non-availability of credit and low stocking limit in the absence of adequate facilities for despatches will amount to denying the traders an effective entry into the market and it amounts to a dubious method to procure wheat at almost the support price by deliberately keeping the traders off the market and thus denying the producer his legitimate price. It is of interest to note that in Punjab markets arrivals this year have started at one-fourth to one-eighth the level of last year. It means the farmers who can afford to do so are holding their produce from the market. Surprisingly even the combine-harvested wheat, which is normally marketed straight from the fields, because of higher moisture content, is being held back.

Foodgrain zones have an administrative role to play to check on prices, market arrivals, movements, sales, stroage, etc. Otherwise, to keep the zones for the purpose of sales by the primary producer and allowing the trade, even though on permit, to transport anywhere across the zone boundaries will amount to a partiality, a favour to the trade and discrimination against the producer-sellers, which may not be digested by the farming community and for too long. If it is honestly desired that trade should participate, there should be no zonal restrictions on movements by the trade and even the farmers should be allowed despatches across the zone after paying the levy. Otherwise private trade cannot be really activated and Government will remain to be virtually the sole buyer in the production markets. There is every reason to believe that on a rational dual-market situation the farmers should be able to get neat rational market prices which may not be less than Rs. 150 to Rs. 160 per quintal for wheat this year. The weaker section of the community can get wheat at Rs. 125.00 or so and Government would be able to meet its welfare objectives through the levy wheat and marginal imports. Lack of rationality in ceiling prices, non availability of credit and despatch facilities, low stocking limits and undue zonal restrictions can develop a parallel black market in foodgrains at a tremendous cost to the nation in general and consumers in particular. Subject to the removal of these market constraints and irrationalities, the new wheat policy is a step in the right direction and the system would need to be extended to all the important foodgrains and planned over a longer period of at least 5 to 10 years in a clearer manner to introduce stability, certainty and rationality in the foodgrains market in India.

The Economic Rationale of USA Assistance

Jatan Raj Kumbhat[*]

When one country provides assistance to the other country, it is invariably motivated by its economic interests like continuing and expanding trade and an increasing import of such raw materials which are scanty in donor countries and are very essential to keep their industries running and the economy expanding. The United States is not an exception to it. For example, the U.S. could not produce steel without import of nickle, bauxite, tungsten, and chromium, to say nothing of consumer items like coffee, and cocoa. In spite of the fact that there are vast markets for manufactured articles in the United States itself, yet its national economy is geared to produce surplus for export for continued and expanding world commerce and increasing supyly of imported raw materials. This duel requirement · depends largely upon the peaceful and sustained economic development of other countries.

Billions of dollars that flow under the aid programmes "are not dollars going abroad, but steel, machinery, fertilisers, and other goods and services purchased in the United States."[1] Thus, through aid, United States of America's national well-being is secured. According to a report prepared by the US National Planning Association for a Senate Committee, the exports, financed by the foreign aid programmes, were 30 per cent or more for a large number of manufactures like ordinance, metal work, machinery, tools, electrical equipment, air-craft engines and parts, motor vehicles, etc. It very much relieves the US economy of the fear of a great depression that followed the Second World War because production increased to a fantastic proportion. But with the cessation of war, demand of the American industrial and agricultural produces fell considerably resulting in fall of exports. Foreign assistance programmes of the United States open new outlets for the disposal of the American surplus.

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[1] Former Aid Administrator, David Bell, Financial Express, Bom., March 11, 1965.

In 1951, the Foreign Commerce Weekly (now International Commerce) published a list of U.S. imports consisting of three major categories :[2]

(1) articles for which the U.S.A. is wholly or largely dependent on imports and for which substitutes are non-existent or not satisfactory (e.g. chrome, manganese, nickle, tin, graphite, industrial diamonds, jute, sisal, quinine, shellac, coffee, tea, cocoa, palm oil) ;

(ii) articles which are wholly or mainly imported but for which, in most or all of their uses, a domestic product can be satisfactorily substituted (e.g. crude natural rubber, cryolite) ; and

(iii) articles which are largely supplied by domestic production, but for which considerable imports are necessary to supplement domestic production (e.g. cane-sugar, wood-pulp, copper, lead, zinc).

A similar list was prepared in 1967, which is not much dissimilar to the above list. Numerous studies, ranging from the landmark report of the Paley Commission[3] in 1952 to more current ones, indicate that the U.S. is becoming increasingly dependent on external sources for essential raw materials.

It is a fact that the industrially advanced nations depends on the under-developed countries for supply of raw materials and under-developed countries on the industrial countries for their requirements of capital and other manufactured goods ; it is nevertheless, true that as a general proposition most trade takes place among the developed countries. Therefore, sustained and continued economic growth of the developing countries will open wide markets for the products of industrial countries, like the United States. To achieve this objective the foreign economic policies crystallised in the form of the 'Marshall Plan' following the Second World War, President Trumen's 'Point Four Programme', and President Kennedy's 'New Deal.'

The object of economic assistance to India was the development of the U.S. economy which is amply clear from the remarks of Wayne L. Hays, a member of the House of Representative, that economic assistance to India would make that country a better customer of the

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[2] Lloyd D. Black : The Strategy of Foreign Aid, 1965, p. 17.

[3] Resources for Freedom, A Report to the President by the President's Material Policy Commission, 8 vols., Washington, 1953.

U.S. goods. He discarded, as insignificant; the argument that India did not deserve economic aid because of its objective of socialistic pattern of society. The U.S. official spokesmen justified economic assistance to India on the ground that, first, it will induce the recipient to maintain a continued and increased supply of raw materials needed for the American industries, and, secondly, it would provide better market for American goods. The Council of Economic Advisers in its report to the President (January 1950) expounded this view,[4] thus

> "The expanded flow of capital under the Point Four Program would create new international markets. A substantial flow of dollars, which the underdeveloped countries could spend where they choose, would provide the countries for the export of capital goods and other products by an expansion of total world market, rather than by self-defeating struggle for present limited markets. Thus, the export of capital under the Point Four Program, which is a basic element in our foreign policy, would contribute greatly to the supply of dollars needed by foreign countries to purchase essential supplies in the U.S."

The United States faced the problem of short supply in certain strategic raw-matetials during the post-war period. President Truman appointed the Materials Policy Commission in 1951, which observed that :—

> "Materials strength is a prime ingredient of general economic strength and growth, which in turn is the foundation of rising living standards in peace and military strength in war. The overall objective of a national materials policy for the U.S.", the Commission stressed, "should be to insure an adequate and dependable flow of materials of the lowest cost consistent with national security and with the welfare of friendly nations."[5]

Before this Commission the Commodity Research Bureau gave the production of 'strategic raw materials' in the total consumption by the U.S. imported from the under-developed countries, as undre :[6]

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[4] Council of Economic Advisers, The Annual Economic Review, Jan. 1950. A Report to the President, (Washington) 124-5.

[5] Communication from the President of the U.S., Transmitting the Report of the President's Materials Policy Commission, June 1952, Resources for Freedom, (5 vols. Washington, 1952) 1, 3.

[6] Commodity Research Bureau, 1960 Commodity Year Book, New York, as reproduced by the International Development Advisory Board, A Report to President Truman, (New York, 1951) —42.

Natural Rubber	100%	Chromium	93%
Tin	74%	Manganese	77%
Copper	70%	Lead	19%
Petroleum	13%	Zink	6%
		Iron	2%

On account of India's under-expansion of industrial and economic base it could supply number of raw-materials to United States. In 1949, it was supplying to the United States 27% of the total imports of manganese ore ; 88% of mica, 95% of burlop ; 20% of goat and kid skin ; 37% of tea ; ungrounded pepper 73%; bristle 1 per cent.[7] India could supply manganese ore in abundent quantity very conveniently. American technical and econmic assistance to India and other countries was a garb under which new sources of materials could be located and receipient countries could be induced to fulfil the American requirements of needed materials.

Forign aid was thought to be a weapon to coerce underdeveloped countries to supply strategic materials to the U.S.A., and the aid to India was defended on this very ground. The Korean War was on and there was a fear in the U.S. that confrontation with communist countries in South-East Asia may be prolonged. It called for increased production of armaments, which required huge quantities of managenese and India could fulfil all the needs. It prompted the United States to extend economic assistance to India on grounds of vital requirements of the U.S. defence, industrial development and international trade.

Further, the cold war and the ideological struggle with Soviet Union undoubtedly gave added urgency to the aid programmes. As India was reckond a potential power in Asia, it was thought essential by the United States to make India favourably inclined toward it to strengthen her side in Asia, hence the large scale assistance to India.

Due to increased mechanisation, farms products were 30 to 40 per cent higher in the immediate post-war period compared to pre-war period, and its disposal was a problem for the United States. For some time UNRRA took care of the large U.S. surplus farms products, but with the gradual rehabilitation of agriculture in the war devasted areas of Europe, U.S. food exports dropped which accentuated the problem of surplus farm products. The system of surplus commodity food assistance to developing countries was established by the U.S. Congress in 1954, under public Law 480. Agriculture exports, under P.L. 480 and other aid programmes, now constitute an important outlet for the U.S. economy. According to the U.S. Department of Commerce, 70 per cent of wheat, 47 per cent of rice, and 25 per cent of cotton exports were moved under these programmes.[8] The Year Book of American Agriculture, published by the Department of Agriculture observed, "Exports of farm products aid is maintaining the well-being of the U.S. economy. Many dollars come back to the U.S. from our sales of farm products to other countries and thereby partly compensate for the flow of dollars for economic technical, philanthropic, and military aid."[9] And the study sponsored by the Council of Foreign Relations, directed by John J. McCloy, David Rockfeller, and Allan W. Dulles, candidly admits.

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[7] Ibid.

[8] Fact Book of U.S. Agriculture, 1953, U.S. Deptt. of Agriculture, p. 90.

> "Surplus farm goods under the Trade Development and Assistance Program (U.S. Public Law 480) were provided in connection with American Economic aid. Beginning chiefly as an attempt to dispose of domestic surplus, P.L. 480 became a valuable instrument of foreign economic policy".[10]

India provides a very important outlet for the United States' surplus agricultural produce, where they constituted 93.5 per cent of assistance represented 55.9 per cent of total aid given to India up to 31st March, 1966 ;[11] and in the fiscal year 1966 represented almost two-thirds.[12] In fact, with the help of this programme, Washington has been achieving many economic objectives, and some of the main objectives are :

1. disposing of an embrassing surplus of farm products at home ;
2. securing valuable strategic materials and political-economic concessions abroad ; and
3. A major portion of cargo is carried by U.S. flag-ships utilising their carrying capacity, giving them business, strengthening their economy and earning dollars by way of freight.

In recent times, the U.S. has imposed further burdens on account of PL 480 shipments. So long India paid in rupees the freight charges for 50 per cent of shipment, it was obligatory to be carried in U.S. ships, which are now to be paid in dollars. As a result, India had to pay Rs. 36 crores in foreign exchange on account of freight charges for supplies under PL 480 in 1965-66.

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[9] Ibid.

[10] Russel H. Field, South East Asia in U.S. Policy, 1963, p. 268.

[11] The Annual Report carried out under PL 480, as amended, during the period January 1 through Dec. 31, 1966, U.S. Govt. Printing Office, Washington D.C., 1967, p. 11.

Not even surplus food shipments under PL 480 were philanthropic. According to Michael Hudson, an economist and a former balance-of-payments analyst for Chase Manhattan Bank, who analysed this question in the 'Myth of Aid PL 480', put the aid receiving countries in debts to the U.S. to the extent of some dollar 22 billion, thereby tying them to the pursue strings on the State Department and the U.S. Treasury for nearly 20 years to come.[13]

As a result of 'aid' the dependence of many countries on the United States has grown steadily with the mounting burden of servicing past debts. The Peterson Commission's report acknowledge that mounting debts, which need to be continuously refinanced on an emergency basis, have kept several poor countries on 'a short leash.' As grace periods end on loans, they find themselves paying out greater amounts to finance past debts effectively neutralising new loans.

The aid, therefore, is more in the economic interest of the United States than the receiver of aid. America may give threats to stop aid but actually it cannot practice it, as it will go against its economic interests. One expert has calculated that if U.S. aid was suspended immediately, 16.4 per cent of U.S. exports of iron and steel mill products would be affected and 25% of its fertilizers exports.[14] Other exports that would be hurt would be railway equipment 15.7%, rice 8%, basic textiles 8.5% and non-ferrous metals and products 7.3%.[15] The Secretary of States, Mr. Wm. Rogers, told Senetor Ford that if U.S. aid was halted, 5,000 American companies employing more than 60,000 persons would be affected, as also 61 American Universities.[16]

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[13] Quoted by M. V. Kamath—'Motives Behind Foreign Aid,' The Times of India. Nov. 19, 1971.

14. 15 and 16. Ibid.

Some Economic Aspects of Cultivation and Marketing of Raw Jute in India, West Bengal —A Case Study

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The relative shares of West Bengal in the All India production and acreage under jute are 58.4 per cent and 53.9 per cent respectively. In view of the importance of jute in the crop economy of West Bengal, a study of the various economic aspects of cultivation and marketing of raw jute would be useful for the formulation of farm policies and programmes. Besides it would be equally worthwhile for improving the production efficiency of the farms.

This paper purports to study the salient aspects concerning the production and marketing of raw jute in Nadia District which happens to be one of the major jute growing dristricts in West Bengal.

Selection of the Village

For the purpose of our study the village Malaimgachha in Chapra P.S. of dristrict Nadia was selcted in view of its representative character in the field of jute production in Nadia District. The variety of jute grown in this village is J.R.O. 632. The farmers are more or less conscious of modern method of jute cultivation, but due to paucity of funds they cannot afford to apply adequate fertilizer and plant protection materials.

The entire population of 68 farms in the village growing jute in the year 1970-71 has been stratified into two groups on the basis of area under jute in order to bring homogeneity in the structural composition of the different farms. Farms having less than 3 acres of land under jute have been categorised under stratum-I and those above 3 acres under stratum-II. As a result of this stratification

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50 farms have fallen under stratum-I while stratum-II contains 18 farms. Finally, out of sample of 34, 25 farms from stratum I and 9 from stratum II have been chosen by adopting the method of stratified random sampling with the proportional allocation :

$$n_i=\frac{n}{N}\cdot N_i$$

When, n_i=Number of farms to be selected from ith stratum.

N_i=Total number of farms in the ith stratum of the population.

N =Total number of farms in the population.

n =Total number of farms selected as sample.

Selected farmers have been interviewed on the basis of a schedule prepared to suit the purpose of the present study.

Input-output data for jute in the relevant year, the prices of inputs and output prevailing during the year and information regarding different channels of marketing and marketing margin etc. have been collected by interrogating the selected farmers and a few intermediaries engaged in the marketing of raw jute.

Objectives of the study

Broadly, the objectives of the present study are to analyse and explain some salient economic aspects of jute production in the selected village of Nadia district. More specifically, the objectives of the study are as follows : To estimate the unit cost and cost of production of jute per acre for all the sample units and specially for the farms under two strata already specified ; analyse the structure and composition of cost per acre for the specified strata as well as for all the farms under study in order to identify those components having relative predominance over others ; compare the net profit per acre of the farms under two strata ; gauge the relative efficiency of all the farms under study in order to identify those components having relative predominance over others ; compare the net profit per acre of the farms under two strata ; gauge the relative efficiency of all the farms in the production of jute ; trace out the different channels of marketing through which raw jute has to pass for arriving at the mill ; and ascertain the producers' 'share in the consumer' rupee, cost of distribution including marketing, transportation, handling etc. and the margins of different intermediaries engaged in the marketing of raw jute.

Methodology

Total cost was classified as (a) fixed cost, (b) variable cost.

The fixed cost is comprised of land revenue, depreciation of farm implements, cost of repairing the farm implements, interest on fixed assets of the farm.

Variable cost consists of the cost of seeds (both home produced and purchased), manures and fertilizers (both purchased and self-supplied), human labour (both family labour and hired labour), bullock-labour (both hired and owned), insecticides and pesticides. The cost of family furnished inputs like seeds, labour, manure etc. have been calculated at their current market prices in the locality. Six per cent annual rate of interest has been charged and marketing lag in the case of raw jute. The actual interest on crop loan for jute which was paid by the farmers has been taken into account.

The cost of production of by-product (jute-stick) has not been segregated from the total cost in computing per acre and per quintal cost of production of jute as the value of the by-product is negligible as compared to that of main product (fibre).

Unit cost and per acre cost were computed by taking the simple arithmetic average of all farms in the strata. The calculation of bulkline cost was attempted for comparing it with the average price of jute in the village. The level of cost which covered the cost of production of 85% of the total crop produced has been defined as the bulkline cost in the context of this study.

Marketing margin as used in relation to the marketing of agricultural produce refers to the difference between the price paid by the ultimate consumer and price received by the farmer. Marketing margin thus includes the cost of marketing, processing etc. and the profit or loss accruing to the intermediaries in the process of moving the produce from the farmer to the consumer. In this case the final consumers of raw jute are the jute mills.

Results and their Interpretation

Table I presents stratum-wise average cost per acre as well as per quintal of jute. The per acre cost of production of jute in stratum I is Rs. 641=01 and in stratum II, it is Rs. 639=28. The per acre cost for both the strata combined is Rs. 640=13. The costs per quintal of jute were found to be Rs. 86=51 in stratum I and stratum II respectively. For both the strata combined the cost per quintal is Rs. 83=46. The table I indicates that the average cost per quintal is greater in stratum I than in stratum II. The reasons behind the higher unit cost of production in stratum I can be ascribed to (a) lower yield per acre (Qtls. 7.41) as compared to that of stratum II (Qtls. 8.04), (b) under-employment and inefficiency of labour, (c) relatively smaller area devoted to the crop in stratum I.

Table I

Average cost of cultivation of jute in Nadia, West Bengal, 1970-71

Stratum	No. of Farms	Cost per Acre (Average) in Rs.	Cost per quintal (Average) in Rs.
	25	641=01	86=51
		(7.94)	(1.06)
II	9	639=28	79=51
		(2.00)	(1.27)
Combined	34	640=13	83=46

[Figures in the parentheses indicate standard error]

The table II shows the bulkline cost per quintal of jute along with the relevent percentage of production, farms and area covered.

Table II

Bulkline cost of Jute in Nadia 1970-71

Stratum	Bulkline cost per quintulin Rs.	Percentage of production covered	Percentage of farms covered	Percentage of area covered
I	96=42	85.00	88.00	87.05
II	89=90	85.00	88.88	90.62
Combined	91=60	85.00	73.53	84.97

Table III compares the bulkline cost, average cost and average price. A careful observation of table III reveals that in all cases bulkline costs are higher than the average costs. In addition to this percentage of farms, production and area covered are larger in bulkline cost than for average cost. It indicates that price policy based on average cost principle will cover a lower proportion of production, farms and area than a price policy based on bulk-line cost. Average price as shown in table III indicates that market price for the year was much higher than the bulkline cost and average cost and covered all the farms, area and production.

Table IV shows distribution of average cost per acre. It may be noted that total variable costs accounted for 87 per cent of the total cost. The total variable cost were 87.65 per cent and 87.66 per cent respectively in stratum I and stratum II. The total fixed costs per acre were found to be 12.35 and 12.34 per cent respotively. Among the variable costs human labour was accounted for major one in both the strata.

Table III

A comparison among the bulkline cost, average cost and average price of jute, 1970-71

Stratum	Cost per quintal Average price in Rs.	Percentage of production covered	percentage of farms covered	Percentage of area covered
I	B.C. 96=42	85.00	88.00	87.05
	A.C. 86=51	35.38	36.00	26.89
	A.P. 155=00	100.00	100.00	100.00
II	B.C. 89=90	85.00	88.85	90.62
	A.C. 79=51	65.36	55.55	60.14
	A.P. 155=00	100.00	100.00	100.00
Combined	B.C. 91=60	85.00	73.53	84.97
	A.C. 83=46	49.20	35.29	44.31
	A.P. 155=00	100.00	100.00	100.00

* B.C.=Bulk-line cost, A.C.=Average cost, A.P.=Average price.

The labour cost was higher in stratum I (51.21 percent) because of the fact that stratum I used more family labour. Next important component of the cost was bullock labour (11 per cent) ; of the total cost bullock and human labour covered about 62 per cent. This result confirmed the belief that jute is a labour consuming crop.

Table V shows profitability of jute cultivation. Average yield per acre had been found to be higher in stratum II (Qtls. 8.04) than stratum I (Qtls. 7.41) and per acre cost was lower in stratum II (Rs. 639.28) than stratum I (Rs. 641.01). The per acre and the per quintal profit were Rs. 507.54 and Rs. 68.49, and Rs. 606.92 and Rs. 75.49 in stratum I and stratum II respectively. The higher output acre combined with lower cost of production per acre in stratum II resulted in larger profit in this stratum in comparison with stratum I. The higher profit and lower cost may be explained as greater efficiency of resources use in stratum II.

The data on the different efficiency criteria for all the 34 farms have been collected. Looking into all these efficiency norms it is difficult to classify each farmer either as efficient or inefficient. The discriminant analysis technique helps in arriving at such a classification. The technique initially requires two clearly demarcated groups of farms, one which can be clearly reckoned by certainly efficient, and the other certainly inefficient. Out of 34 farms, 21 certainly efficient and 13 certainly inefficient farms are selected in the following manner.

Table V

Profit from jute cultivation in Nadia, 1970-71

	I	II	Combined
Average output of jute Fibre per Acre (Qtls.)	7=41	8=04	7=67
Cost of cultivation per acre (Rs)	641=01	639=28	639=99
Cost of production per Quintal (Rs.)	86=51	79=51	83=46
Net profit per acre (Rs.)	507=49	606=92	548=46
Net profit per Quintal (Rs.)	68=49	75=49	71=56

The average yield/acre and average cost/quintal for all the 34 farms were calculated. The farms whose per acre yield exceeded the average and whose cost per quintal was below the average were first identified. Then the farms having the output cost ratio exceeding unity were considered to be efficient.

The sets of frequency distribution in Tables VI, VII and VIII reveal that the majority of farms were found in the higher level of yield per acre and output cost ratio and lower level of cost of production as compared with the distributions of their inefficient counterparts. The distributions of these two groups of farms on the basis of size of land under jute were furnished in Table IX.

Table VI

Efficiency criterion I. Yield/Acre of Jute—1970-71

Level of yield	Efficient farms		Inefficient farms	
(Qtls.)	No.	Percentage	No.	Percentage
6 to 8	14	41.18	13	38.23
8 to 10	7	20.59	—	—

Table VII

Efficiency criterion 2. Cost per Atl. of Jute 1970-71

Level of cost per	Efficient farms		Inefficient farms	
quintal (Rs.)	No.	Percentage	No.	Percentage
62=50—75=00	6	17.65	—	—
75=00—87=50	6	17.65	2	5.88
87=00—100	—	—	19	55.88
100—112=50	—	—	1	2.94

Table VIII

Efficiency criterion 3. Ratio of value of output to cost of Jute 1970-71

Value of output and cost ratio	Efficient farms		Inefficient farms	
	No.	Percentage	No.	Percentage
1.00—2.00	26	76.47	—	—
2.00—3.00	8	23.53	—	—

Table IX

Distribution of efficient and inefficient farms on the basis of the size of land under Jute, 1970-71

Size of Land (Acre)	Efficient farms		Inefficient farms	
	No.	Percentage	No.	Percentage
Up to 1 acre	2	5.88	4	11.77
1 to 2 acre	3	8.82	10	29.42
2 to 3 ,,	1	2.94	3	8.82
3 to 4 ,,	1	2.94	2	5.88
4 to 5 ,,	1	2.94	2	5.88
5 and above	4	11.77	1	2.94

It is evident (Table IX) that the efficient farms are well distributed over all size classes but inefficient farms are more concentrated in the lower size classes. This pinpoints to the inefficiency of size of holding in explaining the variation in productive efficiency.

Table X and XI reveal the marketing margins (both in absolute and percentage terms) of jute in the market. The producers' share in consumers' rupee was found to be 90.12 per cent. In absolute terms it was accounted for Rs. 155=00. When the price paid by the consumer was found to be Rs. 172=00. The cost of marketing was found to be 2.91 percent of the consumers' price. The cost was low because the village was near the local market. Marketing margin was found to be 9.88 per cent.

Table X

Price spread analysis for jute 1970-71
(at a point of time)

Price paid to farmers for jute per quintal	Cost of transport of the Farish for bringing the produce to the local market	Price at which Farish sells to Mahajan	Cost of processing by Mahajan (per quintal)	Transport & labour cost	Price at which Mahajan sells to the mill per quintal
155=00	1=00	161=00	1=50	2=50	172=00

Table XI

Producer's share and marketing margin of Jute : 1970-71 (at a point of time).

Producers' share	Farish's share	Mahajan's share	Cost of marketing	Consumer's Price
90.12	4.06	4.06	2.91	100

Conclusion

The result of this investigation suggests the following conclusions :

The average cost for producing jute per quintal can be reduced by increasing the output per acre. Improved practices such as line showing by seed-drill, spraying of insecticides by power-sprayer proper, intercultural practices, proper retting and use of adequate manures and fertilizers, specially nitrogenous fertiliser are expected to increase the yield considerably.

The estimated bulkline cost suggests that the floor price should not be less than Rs. 91=60 per quintal considering all the sample farms under study.

If the cultivators can sell the bulk of the produce through co-operatives, they will have more bargaining power. In the case of the sample farmers, the producer's share is 90.12 per cent. If they can sell through co-operatives they are expected to get higher returns.

RESOURCES FOR PRIVATE SECTOR IN FIFTH PLAN

	(Rs. crores)
1. Own Savings	30055
(a) Corporate	4139
(b) Cooperative	169
(c) Household	25747
2. Net transfer to	13911
(a) Financial institutions	12945
(b) Public sector	880
(c) Rest of the world	86
3. Total (1—2)	16144
4. Add investment by private financial institutions	17
5. Aggregate	16161

(Continued from page 336)

exports pay for imports. Increase in exports may also cause an increase in imports if exports have high import-contents. Export promotion should be aimed at for those goods which have relatively smaller import-contents. It is to be noted that exports are exogenously fixed in the Fifth Plan model with 7.6 per cent per annum as growth-rate and thers have set patterns of economic growth for this Plan, given the behaviour of other variables. These patterns are affected by import contents of these exports and by the existing technology of production of these exports.

(d) The Fifth Plan discusses the problems of regional imbalances. But it has not proposed concrete steps to fight this growing menace of regional imbalances of economic progress. It observes that the individual States would be responsible for the development of their own backward areas. However, the regional planning can also be tackled by means of input-output analysis. For this purpose, the sector of production would be replaced by sector of "economic" regions. A study of inter-region relationship is thus feasible. The matrix of the technical coefficients will indicate the relative potentialities of production and input provision between these regions. The pattern of growth will, of course, take a new dimension, when a model is worked out for inter-region relationship. This model will, of course, be integrated with the model for inter-industry relationship. As to how to integrate inter-region and inter-industry models of economic growth is an interesting subject which deserves serious discussion.

References

1. Allen, R.G.D.: Mathematical Economics, McMillan, London, 1959, 2nd Ed.; Chapters 4, 5, 6, 11, 14 and 17.

2. Ghosh, Ranen: "Public Sector and Economic Development in India", Economic Affairs, Vol. 18, Nos. 1-2, 1973.

3. Government of India:

(a) Planning Commission: Approach to the Fifth Plan, 1974-79; January, 1973.

(b) India: Economic Bulletin, Jan.-Feb. 1974: 'The Fifth Five Year Plan—Some Aspects', pages 2-3.

(c) India: Economic Bulletin, Mar, 1974: 'The Fifth Plan—Pattern of Development'.

4. Lange, Oskar: Introduction to Econometrics. Pergamon Press, 1959, Chapter 3.

(Concluded)

Comparative Economics of Harvesting Wheat with Combines and Other Methods

S. S. Grewal and H. S. Sandhu*

With the introduction of high yielding varieties, the production of wheat has registered a substantial increase in the state of Punjab. The Mexican wheats have to be harvested within a short span of time to avoid shedding of grain and the threshing is also required to be completed within a short period to avoid losses due to the onset of early rains. The traditional technology of threshing wheat with bullocks was ill-suited to cope with the requirements of the new situation and bullocks have virtually disappeared, so far as threshing of wheat is concerned. There is a variety of equipment available for threshing wheat starting from small-sized diesel engine/electric motor operated threshers to large-sized tractor-operated threshers and self-propelled combines. However, harvesting of the crop is still done largely by manual labour except where the combine performs the dual job of harvesting and threshing.

To meet labour shortage and to facilitate timely harvesting and threshing of the crop, the Punjab State Cooperative Supply and Marketing Federation, the Punjab Agro-Industries Corporation and some individuals have imported combine harvestors. The above agencies hire out combine services to the cultivators. The introduction of combine harvestors raises some pertinent questions relating to the economics of harvesting wheat with combines versue other alternatives. Another closely allied issue is the impact of this technology on human labour employment. These two aspects are examined in the present article. The results are based on the data collected from Ludhiana district which is a leading wheat growing district with well developed threshing technology of different kinds. The cost comparison are made on per acre (0.4 hectare) basis.

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Situation Studied

The following methods of harvesting and threshing of wheat which were in common use with the farmers were compared with that of harvesting and threshing with self-propelled combines and with each other.

i. Harvesting with owned labour (assisted partly by hired labour) and threshing with small-sized thresher operated with 5 H.P. diesel engine ;

ii. Harvesting with owned labour (assisted partly by hired labour) and threshing with small-sized thresher operated with 5 H.P. electric motor ;

iii. Harvesting with owned labour (assisted partly by hired labour) and threshing with large-sized thresher operated with tractor (35 H.P.) ;

iv. Harvesting with manual labour on contract basis and threshing with large-sized thresher operated with owned tractor (35 H.P.) ;

v. Harvesting with manual labour on contract basis and threshing also on contract basis with hired tractor and thresher.

The first and second methods were mostly used by a majority of small and medium cultivators having bullocks as a source of draft power. The third and fourth methods were used by the tractor operators and the last one was used by farmers who have meagre resources of their own and depend upon custom hiring work.

Cost of Harvesting with Combines Versus other Methods

The cost of getting wheat harvested and threshed with self-propelled combines works out to Rs. 205/- per acre (Table 1). This cost is higher compared with all other methods where the cost varies from Rs. 143.58 to Rs. 187.85 per acre. The factor accounting for higher cost in case of combines is the loss of wheat bhusa valued at Rs. 80/- per acre. However, the big growers who are the principal usess of combines did not consider this loss significant enough keeping in view the acute shortage of labour for timely completion of these operations.

The cost of harvesting with manual labour and threshing with owned machines is in fact less when we do not consider the cost of abour provided by the farmers' family (tables 2 to 4). The farmers make use of their own labour also for harvesting and threshing operations. Their costs go down to the extent they use their own labour which is not possible when the services of the combine harvestors are used. The labour used for harvesting and threshing operation in case of situations i, ii and iii was 10, 9 and 8 man days respectively (table 2, 3 and 4). Taking half the labour used to be provided by the farmer's family, the reduction in cost would be Rs. 50, Rs. 45 and Rs. 40 in case of situation i, ii and iii respectively. Thus, the actual cost after taking into account this reduction would be Rs. 111.73, Rs. 98.58 and Rs. 139.00 per acre for these methods respectively. Similarly, there was reduction in cost of Rs, 10/- in each of the situation iv and v (table 5 and 6). The combine harvesting was not favoured by small and medium farmers due to economic considerations consisting of loss of wheat bhusa and non-use of their own family labour.

Comparison of Methods other than Combine Harvestors

Harvesting by owned labour (assisted partly by hired labour) and threshing with electric motor was the cheapest method with cost at Rs. 111.73 per acre. The cost was less with electric motor because of lower cost of power and less use of human labour in threshing operation.

Harvesting by owned labour (assisted partly by hired labour) and threshing with owned tractor cost Rs. 139.00 per acre. The cost per acre when harvesting was done by contract labour and threshing was done with owned tractor worked out at Rs. 180.80 per acre. The cost was the highest (188.05 per acre) when harvesting and threshing both were got done on contract basis. It is apparent that harvesting with owned labour (assisted partly by hired labour) and threshing with owned tractor was the least cost method for larger holders having tractors. Further, there was not much difference in cost in case of last two methods, yet the farmers possessing tractors preferred to do threshing with their own equipment because there was no certainty about the timely availability of custom hiring services for threshing operations

Saving in Time

There was another side of the picture which related to the consumption of time in the performance of these operations. Threshing with electric motor/diesel engine although economical consumed 10 hours per acre compared to 5 hours per acre when threshing was done by tractor operated threshers. The use of cheaper methods was all right for small cultivators who have less acreage under wheat. But big growers who had to deal with large acreage put more premium on saving of time than cost because the use of time saving appliances enabled them to finish their operations in a short span of time before the onset of rains.

Impact of Combine Harvestors on Labour Employment

The human labour requirements for harvesting and threshing of an arce of wheat with self-propelled combine harvestors worked at 3/4 man day. The average human labour requirement in case of other methods discussed earlier is about 9 man days per acre. Thus there is a loss of labour employment to the extent of 8¼ man days per acre when combines are used.

During the year 1972-73, 237 self-propelled combines were used in the Punjab for harvesting of wheat. The area harvested by this fleet of combines was estimated at about 1.04 lakh acres. It formed about 1.82 per cent of the total area under wheat in the state. The introduction of combines so far had not affected human labour employment and wage rates. Rather, these help to finish the operations in time and avoid possible losses which could occur if the time spent on harvesting Mexican wheat is prolonged. However, there needs to be chalked out a well thought out policy on the pace of introduction of this type of technology. The number of combines and their relative profitability vis-a-vis other methods may be examined from time to time so as to keep their number at a limit which is subservient to the interests of both the growers and the farm labourers.

Table 1

Cost of harvesting and threshing of one acre of wheat with combine on custom hiring

Basis	Cost (Rs.)
1. Hiring charges @ Rs. 120.00 per acre	120.00
2. Unloading of produce, cleaning of fields (½ man per day*)	5.00
3. Loss of wheat bhusa (16 quintals @ Rs. 500 per quintal)	80.00
Total	205.00

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* Throughout this analysis daily wage rates were taken at Rs. 10.00 for a day of 10 hours.

Table 2

Cost of harvesting of an acre of wheat by owned labour (assisted partly by hired labour) and threshing with small-sized thresher, operated with 5 H.P. Diesel Engine*

		Cost (Rs.)
A.	**Harvesting**	
1.	Harvesting (5 men per acre @ Rs. 10/- per man)	50.00
2.	Cost of material for tying bundels (150 bundles @ 0.10 N.P. per bundle)	15.00
3.	Transport of bundles to the threshing floor (2 men for ½ day)	10.00
	Sub-total	75.00
B.	**Threshing with 5 H.P. Disel Engine**	
4.	Fuel and lubricants (for 10 hours @ Rs. 1/- per hour)	10.00
5.	Depreciation of Engine @ 0.19 p. per hour for 10 hours (price Rs. 2000/- Junk value Rs. 100/- ; life 10 years ; annual use=1000 hrs.)	1.90
6.	Depreciation of thresher (Rs. 1500/- ; life=10 years Junk value Rs. 50.00, annual use=120 hours)	12.08
7.	Interest on investment on diesel engine (@10% on Rs. 2000/- for 10 hours, annual use 1000 hours)	2 00
8.	Interest on investment of thresher @ 10% on Rs. 1500/- (allocated to one acre out of 12 acres under wheat).	12.50
9.	Repair charges for diesel engine (@ 10% of purchase price per annum for 10 hours) (annual use 1000 hours)	2.00
10.	Repair of thresher @ 5% per annum per acre (annually used for 12 acres)	6.25
11.	Human labour expenses (4 men per acre)	40.00
	Sub-total	86.73
	Total expenses of harvesting and threshing one acre (A+B)	161.73
	Total expenses assuming ½ of the labour to be provided by the farmer (161.73—50.00)	111.73

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* An acre of wheat is assumed to have a yield of 15 quintals grain and 16 quintals of bhusa in this analysis.

Table 3

Cost of harvesting of an acre of wheat by owned labour (assisted partly by hired labour) and threshing with small-sized thresher operated with 5 H.P. electric motor

		Rs.
A.	**Harvesting***	
1.	Harvesting (5 men per acre @ Rs. 10 per man)	50.00
2.	Cost of material for tying bundles	15.00
3.	Transport of bundles to the threshing floor (2 men for ½ day)	10.00
	Sub-total	75.00
B.	**Threshing with Electric Motor** (5 H.P.)	
4.	Electric bill (for 10 hours @ 4 units per hour, one unit costing 0.10 p.)	4.00
5.	Depreciation of electric motor for 10 hours (price Rs. 1500/- ; life 10 years ; annual use 1000 hrs.)	1.50
6.	Interest on investmen on electric motor for 10 hours (@ 10% on Rs. 1500/- ; annual use= 1000 hrs.)	1.50
7.	Repair of electric motor (@ 5% of purchase price for 10 hours)	0-75
8.	Depreciation of thresher*	12.08
9.	Repair of thresher*	6.25
10.	Interest on investment of thresher*	12.50
11.	Labour charges (@ 3 men for 10 hours)	30.00
	Sub-Total	68.58
	Total expenses of harvesting and threshing one acre (A+B)	143.58
	Total expenses assuming ½ of the labour to be provided by the farmer.	98.58

* The bases of calculation are same as in Table 2.

Table 4

Cost of harvesting of an acre of wheat with owned labour (assisted partly by hired labour) and threshing with large sized thresher operated with tractor (35 H.P.)

		Rs.
A.	**Harvesting**	
1.	Harvesting (5 men per acre @ Rs. 10/- per man)	50.00
2.	Cost of material for tying bundles (150 bundles @ 0.10 p. per bundle)	15.00
3.	Transport of bundles to the threshing floor (2 men for ½ day)	10.00
	Sub-total	75.00
B.	**Threshing with tractor (35 H.P.)**	
4.	Fuel and oil for tractor (for 5 hours @ Rs. 3.00 per hour)	15.00
5.	Depreciation of Tractor (for 5 hours) (price Rs. 30000/- ; Junk value=3000/- ; life=10 years, annual use=1000 hours)	13.50
6.	Interest an investment of tractor for 5 hours (@ 10% on Rs. 30000/- ; annual use=1000 hours)	15.00
7.	Repair of tractor for 5 hours @ 5% of purchase price, annual use=1000 hours)	7.50
8.	Depreciation of tractor operated thresher (per acre) (price 4000, Junk value 100, life 10 years used for 30 acre).	13.00
9.	Interest on investment on thresher (per acre) (@ 10% of Rs. 4000/- ; annual use=30 acre)	13.33
10.	Repair of thresher (@ 5% of purchase price used for 30 acres per year).	6.67
11.	Human labour for threshing (@ 4 men for 5 hours)	20.00
	Sub-total	104.00
	Total expenses of harvesting and threshing of one acre (A+B)	179.00
	Total expenses assuming ½ of the labour to be provided by the farmer (179.00—40.00)	139.00

Table 5

Cost of harvesting of an acre of wheat on contract and threshing with large-sized thresher operated with (Tractor 35 H.P.)

		Rs.
A.	**Harvesting**	
1.	Payment to contract labour (@ 1/25th share of bundles)* Yield per acre 15 quintals wheat Bhusa (@ Rs. 81/- per quintal) and 16 quintals Bhusa (@ Rs. 5/- per quintal)	Grains 48.60 Bhusa 3.20
2.	Cost of material for tying bundles (150 buudles @ 0.10 p. per bundle)	15.00
3.	Transport of bundles to the threshing floor (2 men for ½ day)	10.00
	Sub-total	76.80
B.	Threshing with owned tractor (35 H.P.) (Details in Table 4)	104.00
	Total expenses of harvesting and threshing one acre (A+B)	180.80
	Total expenses assuming ½ of the labour to be provided by the farmer (180.80—10.00)	170.80

* The most common mode of payment to contract labour was 1/25 share of the bundles or 60 kgs. of wheat grains. The cost of 60 kgs. of grains including their processing charges was about the same as that of 1/25 share of bundles.

Table 6

Cost of Harvesting of an acre of wheat by manual labour on contract and threshing on contract with hired tractor

		Rs.
A.	Harvesting expenses on contract basis (details same as table 5)	76.80
B.	Threshing on contract basis with hired tractor :	
2.	Threshing on contract basis (@ Rs. 6/- per quintal for 15 quintals)	90.00
3.	Human labour (@ 4 men for 5 hours)	20.00
4.	Cost of meals to the tractor operator (@ Rs. 2.50 per day for ½ day).	1.25
	Sub-total	111.25
	Total expenses of harvesting and threshing one acre (A+B)	188.05
	Total expenses assuming ½ of the labour to be provided by the farmer (188.05—10.00)	178.05

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Recession Round the Corner

Thinking and counter-thinking are increasingly flowing over the issue whether recession is round the corner of the economy of our country. The Prime Minister herself has come out with strong words that the talk of recession has no foundation and welcomes the reductions in prices of some articles attributing them to her Government's correct policies of credit restriction, curtailment of Governments' expenditures and crackdown on smugglers, hoarders and operators of black money. She seems to have expressed surprise "Why cannot the prices be reduced to induce demand as they were raised until recently to cash in on demand." The RBI is also on the open market to defend its recent credit policy as realistic. For, in its opinion, it restrains credit without imparing the normal flow of credit to sustain core investment, augment production and facilitate public distribution of essential commodities.

Economic laws take their own course. If money supply is increased, keeping the real income unchanged, prices will rise proportionately. There is no escape from it. Or if investment (and employment) continues to increase "bottlenecks," diminishing returns, and the delicacies in monetary and fiscal measures will have their impact on prices leading them on to the path of inflation ; and if there come the roughshods of price hikes of imported inputs like oil and food or irrational demand for wage rise or profit hunger or political concessions for the growth of a "complementary economy" the magnitude of inflation will be far from a "creeping" one.

The point is where our economy stands today. There are no two opinions that the present rate of inflation indicates a state of hyper-inflation. To concentrate, the economy is in the hard grip of the all-time high level and speed of inflation as also, until very recently, of the expectation of inflation. It may give some pleasure to the academicians to locate who, when and how far, had been responsible for this state of complex affairs of the economy, but that will not break the nut or remove the rut. The time is now for us to admit and accept that "stagflation" has developed in our body economic. That is, the economy has been suffering from "stagnation" on the one hand and "inflation" on the other. The former calls for its cure more investment and the latter for restraint on investment. Two opposing forces resting in unity in one shell ! If disturbed it will explode with all vengeance and if not disturbed it will slowly slide back the economy starting from price fall to profit fall to lay off to downward joint action of the multiplier and accelerator.

The Prime Minister seems to be happy over the fall in prices of some essential articles and the official circle for the increase of production in some key industries. The determinable point is how far, if at all, the price fall is the result of the rise in national productivity. Alternatively, how far, if not absolutely, the price fall reflects the unintended accumulation of inventories. The case seems to be stronger in favour of the latter, i.e. recession is round the corner. For the basic facts are that (i) the RBI and the banks have pulled back their policy to feed any price rise ; (ii) the Governments have cut back their expenditure programmes ; (iii) the consumers spend much more on less quantity of goods squeezed by price rise and fall of the quantity of money at their disposal for spending, and (iv) the operations on smugglers and hoarders have cracked the "complementary economy", which has been unrecognizably one of the two legs of the country's planned economy.

The conclusions that follow from these facts are that costs are high and expected to be higher still but money is short and expected to be shorter still into the pockets of the consumers. The consequence is the price fall and inventory accumulation. A case of recession. Even if the price fall is due to dehoarding by hoarders its spell is sure to be of short duration and it will lead to a greater unintended accumulation of inventories. For the market will be dumped either by lower prices or by additional supply at competitive prices for which no consideration was given when productions, costs and prices had been planned for the planned sectors.

Common Sense of Anti-Inflationary Price Policy in Indian Plans

K. N. Prasad*

The purpose of writing this essay is simple and unassuming. It is to outline the broad contents of the anti-inflationary price policy as formulated by the authors of the different Five-Year Plans of India in order to enable the reader to appraise better the present approach of the Government and the academicians to this problem. In a subsequent paper attempt will be made to examine this issue critically and in depth.

Over a longer period, and especially in a period of rapid development, the structure of prices in any country is bound to change. Apart from automatic changes in it, under deliberate planning changes may be induced by consciously tampering with it. The authors of the First Plan viewed the price policy partly as a problem of allocation of productive resources in conformity with a set of defined targets and partly as a problem of ensuring reasonable equality of sacrifice among the different sections of the people. The former was considered to be a 'consistent aim' of economic policy. They desired changes in the price structure to be kept in step with those in the level of incomes and with the shifts in their distribution, as far as possible. Had the changes in the price structure been to outrun those in the income-level, not only would considerable hardships have been caused to many people but also would the plan objectives have been jeopardised in the process. Therefore, the authors of the first three plans enjoined that in a developing economy price policy must ensure that the movements of relative prices accord with the priorities and targets set out in them and must thwart any 'considerable' 'undue' 'continuous' rise in the prices of the essential goods that enter into the consumption of low-income groups. The Third Plan, in particular, stressed that the fixed income earners, among whom are some of the most vulnerable sections of our society, could not be expected to put up too long with an erosion of their standard of living. It noted how the women belonging to these groups were forced increasingly to seek employment to augment their family income lest they should not cope with high prices. The Second Plan in elaborating the contours of a mixed economy maintained that over a large field of economic activity the role of economic policy was "to influence the course of private investment through approptiate changes in relative prices and profitability." Under certain circumstances, the accent may be on the maintenance of particular price ceilings and through them on the real income accruing to specific classes. Under other conditions, the enforcement of price floors may be a necessary corollary of a policy of ensuring a reasonable rate of return on efforts in certain lines of economic activity. It is important to operate upon and modify money income flows so as to maintain a balance between the supply of consumer goods and the purchasing power available for being spent on them, between savings and investment, and between receipts and payments abroad. In addition, a balance between the demand and supply of each important article is essential. The desired balances may be achieved in part by means of adjustment in prices and factor payments, through budgetary policies, and, if imperative, through direct controls. However, the process as well as the methods of adjustment have to visualise in advance and have to be provided for in the plan itself. To quote the Second Plan, the essence of planning is to ensure that demands and supplies are matched in a manner which exploits physical potentialities as fully as possible without major and unplanned changes in the price structure.

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The First Plan was opposed to price stability *per se*, which could not be countenanced, particularly if it were to be attained only by restricting the incomes of the large masses of the people. But the Third Plan regarded stable (and reasonable) prices as a better incentive for the farmers than high but fluctuating and uncertain prices. The Draft Fifth Plan is of the view that in the context of the recent inflationary trends it is necessary to maintain price stability for achieving the basic objectives of the plan. But it does not want the question of price stability to be looked at as one of demand management alone since it is intimately connected with the pattern of growth envisaged in the plan.

In all the first three plans the reader gets the impression that their authors hold inflation to be inevitable, somewhat an inexorable accompaniment of development. Thus, in the First Plan itself there is the hint that the level of prices is likely to go up over a longer period, and especially in a period of rapid development. The inflation-proneness of a developmental plan in its early stages derives from the fact that it raises money incomes more rapidly than production. When the increased money incomes are allowed to step up current consumption expenditures, they rebound forthwith on prices, particularly of commodities like food that are in short supply. The Second Plan also emphasised the inflation-impregnated character of a developing economy and stated that generation of new demands slightly ahead of supplies was part of the strategy of development. It opined clearly that a contractionist policy could be adopted only in the last resort. Likewise, the Third Plan believed that it was "inevitable" that "from time to time" inflationary pressures might emerge. The inflation-orientation of a growing economy is a by-product of the upward pull of demand factors in it. Certain upward pressures on prices are both implicit in development and have to be accepted. Instances of inflation-breeding forces are: 1. *Lags.* The process of accelerating investment involves creation of money incomes ahead of the availability of goods and services. Investment adds to real national income after a time. The larger the investment effort, the greater the upward pressure on prices, assuming the output-mix as given. 2. *Gestation Periods.* Certain types of investment take a longer time to mature than other ones. The more long-maturing the projects that are undetaken, the greater is the resultant strain on the economic system. 3. *Diversion of Resources to New Ventures.* A substantial transfer of manpower and other resources to new uses occasions payment of larger monetary rewards. This is a significant inflationary factor.

Some increases in purchasing power at chosen points are pronounced by the Indian planners as necessary and even desirable for the smooth functioning of the economy. Rising prices tend to enforce such rates of savings as would not otherwise be possible. Sectional price-rises are apt to bring about a redistribution of available supplies leading probably to a rise in the real incomes of the newly employed and a fall in those of the already employed. To some extent, such a redistribution may assuredly be necessary as well as desirable. But as shown above, there are obvious limits to this, particularly as the incidence is to fall on commodities like foodgrains. Inflationary situations are not conducive to the most efficient use of resources. They distort relative prices and tend to move them away from the uses that have higher social priorities, which militate against the requirements of development. When they last long, they generate economic instability and social unrest. If the financial outlays are realised only at higher prices, their real content gets correspondingly impaired.

The price trends in the Indian economy during the period of planning have given a cruel lie to the hopes of the planners that price rise would not be undue or continuous and would occur from time to time. Let us consult some data. About middle of 1951 the index of wholesale prices was around 450. It went down to 367 in May, 1952, and soon after was around 390. The cost of living indices did not disclose a comparable fall. Prices fluctuated widely in the First Plan period. They showed a rising trend through the Second Plan period. At the commencement of the Third Plan the levels of wholesale prices and cost of living were already high. It became obligatory to ensure that there was no accentuation of the inflationary pressures in the course of the Third Plan and that the levels of living of the most vulnerable classes in society were safeguarded. Up to 1962-63 the rise in wholesale prices was mild. In the years that followed the rise was sharper. The general index of wholesale prices in 1965-66 was 32 per cent higher than that in 1960-61. This was largely due to the rise in the prices of foodstuffs. During 1966-67 (a drought year) wholesale prices rose by 16 per cent and prices of food articles by 18 per cent. There was no respite during 1967-68. Wholesale prices went up further by 11 per cent and food prices by 21 per cent. During 1968-69 prices became relatively stable owing to the spurt in food production during the previous year and the persisting restraint on expenditure by the Government sector. The consumer price index (1949=100) advanced from 124 in 1960-61 to 169 in 1965-66, 191 in 1966-67, and 213 in 1967-68. This enduring increase in the price-level necessitated increased grants of dearness allowance to the Government employees and industrial workers. The average price-level in 1972-73 was in terms of the index of wholesale prices 9.9 per cent higher compared to the 1971-72 level, primarily owing to a rise of 13.9 per cent in the index of food articles.

Turning to the factors behind this tremendous price-hike, we find that the mounting demand pressure, originating from the rapid growth of populanation and of money incomes, encountering less rapidly rising supplies or supplies registering sharp deceleration in the various sectors is undoubtedly the chief explanation. Even the recent inflationary trends have arisen to a large extent from the failure of production in agriculture and related segments. Past experience has borne out that given a colossal investment programme, the degree to which prices can be kept relatively steady is contingent vitally on how far agricultural production can be stepped up. The development of industry, mining and transport rests upon the foundation of an efficient and progressive agrarian sector. In the Indian situation production of agricultural commodities and their prices play a crucial role in determining the general level of economic activity and prices, and hence occupy a pivotal place in the entire set-up.

Another factor aggravating inflation is this that despite huge expenditures actual development has often fallen short of targets, consequent upon delays in construction, escalation of costs and the failure to utilise capacity fully in many core sectors. Added to these has been the fact that concerns speed, economy and efficiency which has not been as pervasive as it ought to have been. As if to compound these difficulties the phenomenon of dualism has seized the economy at times. The existence of underutilised capacity in the capital goods sector, on the one hand, and the prevalence of strong inflationary pressures in the consumption goods sector, on the other, are ascribable to the fact that the pattern of output capacity was altered in favour of the investment goods but there was no *pro tanto* change in the structure of gross national expenditure in favour of investment outlays. According to the authors of the Draft Fifth Plan, this disproportionality lay at the root of the state of the so-called 'stagflation', that is, stagnation in some sectors and inflation in others, which characterised the greater portion of the period of plan holiday during 1966-69. To ward off the appearance of such a disproportionality the change effected in the structure of demand has to move in unison with that made in the pattern of output.

We have said above that huge expenditures were incurred from plan to plan. But part of these was incurred by means of an excessive dose of deficit financing, which holds another key to the persistence of inflationary pressures in the Indian economy. To adduce figures, the extent of deficit financing (defined as drawing down of foreign exchange reserves and net addition to currency in response to the Government's budgetary operations resulting in a secondary expansion of bank credit) was Rs. 2060 crores during the Fourth Plan. During the period of plan holiday it amounted to Rs. 682 crores. During the Third Plan it was of the order of Rs. 1133 crores.

During the Second Plan it was Rs. 948 crores (including Rs. 200 crores of drawing down of sterling balances). During the First Plan Rs. 140 crores of sterling balances were drawn down. The Third Plan was the first to propose to limit deficit financing to the minimum as warranted by the genuine monetary needs of the economy in view of the rise in prices that had occurred during the Second Plan period and of the fact that, unlike in the Second Plan, there was no cushion of foreign exchange reserves which could be drawn upon as an offset to deficit financing. The Draft Fifth Plan has very plainly explained the difficult problem facing the planners. In spite of the strenuous effort made for augmenting the domestic budgetary resources, especially through additional resource-mobilisation, recourse to deficit financing on an ample scale, particularly during 1971-73, became unavoidable. During 1969-70 deficit financing had been kept down to Rs. 58 crores, the lowest figure for any single year since 1955-56. As a result of the marked jump in Plan outlay during 1970-71 it shot up to Rs. 359 crores in that year. Thereafter it rose to Rs 710 crores during 1971-72 and to Rs. 848 crores during 1972-73, mainly on account of the heavy burden imposed on the public exchequer in those years by the outlay on relief to the evacuees from Bangladesh, increase in defence expenditure, larger expenditure on relief from natural calamities, revision of the emoluments of the Government employees and others, food subsidy, and assistance to Bangladesh. For 1973-74 the original estimates comprised deficit financing of Rs. 85 crores only. But soon it was realised that the actual deficit financing might be larger because of the implementation of the recommendations of the Third Pay Commission. Although in the early part of that year deficit financing turned out to be of a sizable order, every effort was made to limit it by curtailing disbursement on both plan and non-plan items as well as by increasing public receipts. The huge dose of deficit financing during 1971-73 coupled with the setback in agricultural production and the sluggish growth of industrial output fanned the fire of inflation. That position was further aggravated by a considerable expansion of bank credit to the private sector in the busy seasons. The economy is at present fraught with excess liquidity.

In the light of the circumstances obtaining in the economy the Draft Fifth Plan notices little scope for deficit financing in the first two years of the Fifth Plan. It proposes to restrict deficit financing in the form of net borrowing from the Reserve Bank against the issue of treasury bills to Rs. 1,000 crores in order to prevent further aggravation of the inflationary pressures. A stern constraint on our plan effort is constituted by the extremely limited availability of foreign exchange. Short of this barrier, the emergence of further inflationary spirals could have been corrected appreciably by increasing domestic supplies of essential goods through larger imports. Whatever foreign exchange we have accumulated is to be used but sparingly.

The attempts at mobilising manpower have induced inflationary trends. India is required to push up the volume of investment continuously over a period of years and to convert a growing production of unskilled rural labour into skilled workers and technicians. Various bottlenecks stem in this process of adaptation. The real resources needed have to be mobilised through monetary incentives. A fairly high degree of profitability has to be secured for those sectors of the economy which have to be expanded more rapidly. All these tend to drive up prices.

This justifies a digression here on deficit financing as postulated in the plans. The earlier planners were of the opinion that deficit financing could be advocated only if and to the extent that there was assurance of steady supplies of the essentials of life. It could not be expected to provide the elasticity of money supply which, as a rule, should come from the credit system. They judged the scope for deficit financing at any particular time not so much in terms of the movements in wholesale prices or in money supply but rather with reference to the trends in the cost of living indices. The later planners took the view that there was "no precise way of estimating the limits of safe deficit financing". Why ? Because increases in money supply take place not only through the budgetary operations of the Government but also through credit creation by the banking system. Both these had to be studied jointly and their appropriate limits decided upon in the light of relative requirements as well as what the economy could absorb in the aggregate. The concept of deficit financing was made to hinge upon two principles. Firstly, a deficit must be judged not merely in terms of the revenue account but in terms of all transactions on revenue and capital accounts and of both the Centre and the States. Secondly, deficit financing is linked with increase in money supply. Withdrawals from cash balances and increases in floating debt normally tend to increase money supply and are as such recognised as part of deficit financing. But the latter may be of three forms, viz., short-term borrowing from the commercial banks, and from the public at large. Moreover, borrowings by the Government may be short-term or long-term. When public expenditure is financed by credit from the central bank, there is a direct increase in circulation. Similarly, purchase of government securities by the commercial banks is not at par with purchase of those securities by the public directly. Their impacts differ. Another complication is that the ownership of these securities is transferable from person to person or institution to institution. In this area fiscal policy of the Government and the monetary policy of the central bank become intertwined and their impacts cannot be easily isolated. In the words of the authors of the Second Plan, "In India, where the normal practice is not to rely on the central bank for subscription to new issues of long-term securities and where short-term debt of the Government is largely held by the central bank, a deficit measured in terms of withdrawals of cash balances and net increases in floating debt gives on the whole a reasonably reliable indication of the impact of the budget on money supply."

One of the prime tasks of economic policy to-day in this country is precisely to limit the magnitude of budgetary deficits. With this end in view Draft Fifth Plan proposes, among other things, to slash food subsidies, the bulk of which is accounted for by wheat, by raising the issue prices of foodgrains supplied to the people through the public distribution system in a phased manner.

In the bygone years the dangers of deficit financing have been magnified not only due to the declines in production but also due to the defects of the system of distribution of essentials of life that could not be geared up effectively uptill now. Absence of a firm and clear policy regarding controls and of assurance of continuity in that policy over a length of time have further narrowed the scope of deficit financing. To the extent that idle manpower and other resources could not be used productively without any notable generation of additional money incomes, the inflationary potentials of the plans could not be minimised at the very start. The planners' suggestion for relying, as far as possible, on voluntary labour and using money principally as an instrument to attract and organise such labour was largely disregarded or proved unworkable. Difficulty in obtaining information on the programmes of investment and development and the progress achieved in the private sector have made the task of diluting the deleterious nature of excessive deficit financing more formidable.

(Continued on page 485)

Inflation In India: Demand-Pull or Cost-Push

R. K. Sinha*

The Problem

The Indian economy is in the midst of a severe inflationary crisis. In the perspective of the last many years of our planned development, the price rise of the year 1973-74 was the highest, and in the current year the inflationary pressure has shown no respite. The situation brings to the fore quite a few questions concering the behaviour of prices in the course of economic growth. The more important and relevant of these questions is whether inflation is conducive to economic growth. As a matter of fact, the available statistical evidence shows that rising prices discourage economic growth. The post-war experiences of the Latin American countries and in recent years of Asian countries clearly show that large scale inflation is detrimental to growth. The experience even of the advanced countries points to the view that inflation renders the process of growth more difficult and that it has to be avoided for social and economic reasons.

Inflation is a socially costly and economically wasteful means of increasing investment. The redistributive effects of inflation are such that they lead to inequitable shifts in incomes, with arbitrary losses to low and fixed income groups and windfall profits to those "advantageously" situated. It encourages excessive investment in inventories, real estate, and foreign balances, and it discourages investment in agriculture and certain fields of industry, particularly if controls hold down prices while costs rise. Thus, inflation diverts the limited resources available for development to sectors where their effect on production is negligible. Moreover, inflation creates difficulties for the government, as it affects all budgetary calculations and gives rise to problems like additional expenditures on wages,

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salaries, subsidies and increased cost of administration, thereby eroding government revenues and reducing the funds available for development or leading to further inflationary financing.

I

Inflation : Demand-Pull or Cost-Push

F. Machlup says that some people regard 'inflation' as a cause (explanation) of a general rise in prices (and some other things too), while others use the word as a synonym (equivalent) for a general rise in prices. A simple but a correct way of describing inflation would be that it means rapid and continuous increase in prices which is self-sustaining. It is really a sign of continuous disequilibrium in the economy where expansion of purchasing power is not keeping pace with the expansion of availability of goods and services.

The issue whether inflation is caused by the upward pull of demand or the upward push of costs is a debatable subject for economists. According to the demand-pull theory prices rise in response to an excess of aggregate demand over existing supply. Cost push on the other hand assumes that inflation is caused by factors of production trying to increase their shares of the total product by raising their prices.

In India, opinion is divided on whether consumer prices in recent years have increased mainly because industry has invested too much and government has invested too much or big business has raised meterial prices and/or labour has raised wage rates too high. The issue before us is partly who is to be 'blamed' for the past rise in consumer prices, and partly what policies should be pursued to avoid the continued increase.

If demand-pull inflation is the correct diagnosis, the Central and State Governments are to be blamed for spending too much and taxing too little, and Reserve Bank of India is to be blamed for keeping interest rate too low, which enables commercial banks to extend too much credit.

If cost-push inflation is the correct diagnosis, trade unions are to be blamed for demanding excessive wagh increases, and industry is to be blamed for granting them. Big business may be blamed for raising 'administered prices' of materials and other producers' goods to yield ever increasing profit rates.

As a matter of fact, inflationary phenomenon in India has shown a combination of both these factors at different stages. Although inflation has been with us for quite a long time, the degree of inflation was moderate in the earlier years. In 1968-1972 the rate of inflation varied within a single digit. Thereafter the price situation has been deteriorating showing a steep rise during whole of 1973 and 1974. In 1973 the rise was 17 per cent over the average of 1972 and now it appears that the year 1974 may witness a much higher rate of inflation as the average consumer price index for the first four months has risen by 15 per cent over the average of the corresponding period of 1973. The wholesale price index too was higher by 23 per cent in 1973-74 and this was on the top of the rise of about 10 per cent in 1972-73. The rise in the wholesale price index in April 1974 over the 1973 level was as high as 29 per cent.

During the past few months some attention has been given to the price spiral by economists of all schools with different remedies like credit squeeze, limiting deficit financing, more taxes, etc. Unfortunately all these have been suggested without identifying the causes which have led to the current situation. Their fundamental error lies in the fact that most of them are treating the inflationary situation as an essentially monetary phenomenon.

Inflation as is commonly understood appears when the rate of growth of aggregate supplies in the economy falls short of the rate of aggregate demand. In other words, it emanates either from excessive aggregate demand related to productive capacity or wages and incomes increasing in excess of productivity gains or both. As stated earlier, in technical jargon, the former is defined as 'demand-pull' inflation and the latter as "cost-push" inflation. As a matter of fact, demand-pull and cost-push inflation go hand in hand, and their mutual reinforcement in pushing up prices depends on the demand and supply elasticity. Generally speaking, all the elements work together in various permutations and combinations with each other to engender inflationary impulses in the economy. But from the analytical point of view, the major reason which generates inflationary forces in the economy are: (i) structural imbalances between the volumes and rates of demand and supply, (ii) locational imbalances between distribution and supply and that of demand, and (iii) social imbalances in consumption standards owing to prevailing inequalities.

II

Price Behaviour

Table I gives an idea of the behaviour of the general level of prices, growth of aggregate monetary demand and the growth of aggregate national product. One can easily conclude from the trend as shown in Table I that the root cause of inflationary spiral over the past few years is the failure of the national output to rise in proportion to the increase in demand. Between the period 1961-62 to 1973-74, the net national product increased by 46 per cent while the rise in money supply and wholesale prices were nearly 274 per cent and 107 per cent respectively. The proportion of money supply with the public which was 22 per cent of national income in 1961-62 increased to 48 per cent in 1973-74. In other words, money supply which reflects a part of the aggregate demand for goods in the form of purchasing power with the public has expanded at a rate faster than the available supply of goods, because of slow growth in real national income.

Table I

Movement in Real National Income, Money Supply and Wholesale Prices

Year	National Income at 1960-61 Prices (Rs. crores)	Per cent Changes	Money Supply (Rs. crores)	Per cent Changes	Whole sale Price (1961-62 =100)	Percent Changes
1960-61	13294	—	2869	—	99.8	—
1961-62	13763	3.5	3046	6.2	100.0	.2
1962-63	14045	2.0	3310	8.7	102.2	2.2
1963-64	14845	5.7	3752	13.4	108.2	5.9
1964-65	15917	7.2	4080	8.7	122.1	12.8
1965-66	15021	5.6	4529	11.0	131.6	7.8
1966-67	15243	1.5	4950	9.3	149.9	13.9
1967-68	16660	9.3	5350	8.1	167.6	11.6
1968-69	17057	2.3	5779	8.0	165.4	1.1
1969-70	17955	5.3	6387	10.5	171.6	3.7
1970-71	18755	4.5	7140	11.1	181.1	5.5
1971-72	19130	2.0	8138	14.0	188.4	4.0
1972-73	19417	1.5	9412	15.7	207.4	9.9
1973-74	—	6.0	10750	14.2	254.0	22.7

Source : Economic Times, July 8, 1974, p. 8

It follows from the above analysis that the main cause of inflation in India is the inability of the agricultural and industrial sectors to supply goods to match the aggregate demand in the economy. In other words, it would mean the failure of our planned efforts and non-fulfilment of targets of the plans rather than monetary factors are responsible for inflationary situation. As for example, from the records of the fourth plan one can find that the record of production of both agricultural and industrial sectors, has been a dismal one. At the end of 1973-74 foodgrains show a shortfall of 40 per cent of the plan targets, oilseeds 27 per cent, groundnut 100 per cent, cotton 52 per cent, and jute 40 per cent. In the industrial sector, the available data reveal a shortfall of 84 per cent of the plan targets in steel ingots, 40 to 60 per cent in phosphatic fertilizers, 92 per cent in newsprint, nearly 60 per cent in cotton cloth, and 35 to 52 per cent in cement. If the plan targets were achieved, the prices would have definitely not gone to such heights as they are to-day.

There is no denying the fact that these shortfalls have claimed a major share in accentuating the commodity prices, yet the situation could have been averted to some extent if the government had adopted a rational approach to stem the rot. On the contrary the government has been mismanaging and sometimes even bungling with the situation by creating artificial scarcity as in the distribution of raw materials to industrial sector by introducing public distribution system. And in fact, it has bungled in the procurement and distribution of foodgrains. As a matter of fact, taking advantages of the situation a large number of hoarders and blackmarketers have launched a mad drive far hoarding all sorts of essential goods as a result prices have been soaring high. All these factors have combined to place our economy in this inflationary situation. I feel, on the basis of above discussions that the current inflation in our country is not monetary phenomena and as such a mere cut in budgetary deficits and income will not solve the problem but in fact it will further reduce the overall level of investment putting the economy in a situation of inflationary recession.

Table II gives an idea that the inflation in India has not been caused by rise in wage cost but by the steep rise in the cost of industrial raw materials. Looking at the trend in the index of industrial raw materials, and also manufactures, one can easily conclude that it is mainly the prices of industrial raw materials and costs of capital and machinery which have gone up. So far as the food articles are concerned, as mentioned earlier, the failure of public procurement and cornering of a large part of the marketable surplus by rich farmers and traders have created scarcity conditions resulting in a steep rise of almost all sorts of foodgrains. Thus the inflation in our economy is not wage-push as it is commonly known but it is a "material-push", and "capital-push" inflation. This fact has also been pointed out in a Reserve Bank of India study relating to 1501 large and medium public limited companies which shows that wage-cost as percentage of value of production has gone down from 15.1 per cent in 1965-66 to 14.5 per cent in 1969-70 while raw materials, components and other manufacturing expenses have gone up from 57.2 per cent to 57.9 per cent during the same period.

Table II

Index Number of Wholesale Commodity Prices

Yearly average	All Commodities	% Increase	Food articles	% Increase	Indus. Raw Materials	% Increase	Manufactures	% Increase
1961-62	100·0	—	100.0	—	100.0	—	100.0	—
1962-63	103.8	—	106.5	—	97.8	—	102.6	—
1963-64	110.2	6.2	115.4	8.4	100.2	2.4	104.8	2.1
1964-65	122.3	11.0	135.4	17.3	115.9	15.7	109.0	4.0
1965-66	131.6	7.6	144.6	6.8	132.8	14.6	118.1	8.3
1966-67	149.9	13.9	171.1	18.3	158.4	19.3	127.5	8.0
1967-68	167.3	11.6	207.8	21.4	156.4	1.3	131.1	2.8
1968-69	165.4	−1.1	196.9	−5.2	157.3	0.3	132.7	1.2
1969-70	171.6	3.7	196.8	−0.1	180.1	14.5	143.5	8,1
1970-71	181.1	5.6	203.9	3.6	187.3	9.6	154.9	7.9
1971-72	188.4	4.0	210.3	3.1	191.0	−3.2	167.1	5.7
1972-73	207.0	9.9	239.6	13.9	203.4	6.5	176.7	5.7
1973-74	254.0	22.7	296.0	23.5	299.0	47.0	205.4	16.2

Source : Economis Times July 8, 1974.

Thus in the absence of "wage-push" influence, inflation in our country cannot be controlled merely by pegging wages and salaries. The rise in wages have taken place as a consequence rather than as a cause of inflation. As indicated in Table III, the price rise has led to a steady erosion of real wages of the working class. Index number of money earning had increased from 106 to 181, the index number of real earnings fell from the level of 103 to 99 in 1971. In such a situation, it is surprising how experts and policy-makers can suggest that the malaise of inflation can be cared by socalled income policy.

Table III

Index Number of Money/Real Earnings of Factory Workers (1961=100)

Year	Index Number of Money Earnings	Index Number of Real Earnings
1962	106	103
1963	109	103
1964	114	97
1965	128	97
1966	139	95
1967	151	91
1968	160	94
1969	171	101
1970	180	101
1971	181	99

Source : Indian Labour Statistics, 1973.

Income Policy

It is now commonly known that a policy for income and prices has been under discussion in the Finance Ministry. As understood, such a policy will restore a balance between the aggregate demand and aggregate supply factors by regulating incomes and this will control inflation. As a matter of fact, an income policy might have relevance in advanced countries where the potential for bargaining as well as government regulation is large. Any attempt to suggest this policy for our country raises an important question regarding its feasibility.

A close look at the structure of incomes in India reveals that "wages and salaries" form only 33 per cent of the total income in the entire economy, while 81 per cent of the total incomes fall under the group of self-employed. Incomes in agricultural sector form 48.5 per cent of the total incomes of which as large a portion of the income as 61 per cent belongs to self-employed, while wages and salaries have a share of only 18.6 per cent. Even in the non-agricultural sector, not less than 22.6 per cent of the total incomes originating in this sector belong to the 'self-employed', while 'wages and salaries and incomes from property formed 46.7 per cent and 30.7 per cent respectively. Thus looking at the above analysis, one wonders what would be exactly the scope for an income policy in

India. An income policy cannot be relevant in a country where the large part of incomes originate in the unorganised sectors.

Thus, while considering the feasibility of an income policy in our *country one would have to consider* how far pre-requisities for the success of this policy have been fulfilled. To mention our own experience we have had price controls on individual commodities over the past 30 years. And this has only led to evasion, corruption, black marketing and administrative hurdles. Since the retail prices in India take place in loose form, it is not feasible to have a control on the prices and sales of a large number of commodities. Thus wage and income freeze and so also price freeze have no meaning in our country unless stern administrative measures are taken. In the absence of capable and honest administration one cannot help but conclude that the income and price policy has no scope in our country.

IV

What Next

What needs to be done in the prevailing inflationary situation is to have a quick survey of the economy and suggest ways to boost the overall economic activity by pushing developmental outlays both in the public and private sectors. Efforts should also be made to increase the marketable surplus of essential consumer goods. At the same time ex-factory prices and margins of profits of all essential consumer goods should be periodically published.

A massivo programme for the mobilisation of domestic savings may also be launched. Heavy reliance on commodity taxation and deficit financing should be stopped forthwith. If the government really wants to fight inflation, it has to be fought on four fronts namely, production, distribution, institutional changes, particularly in agricultural sector, and fisal and monetary policies.

Increased production is the need of the hour and for that the psychological uncertainty about the future, especially for those who produce the goods, should be removed. To fight the inflation, there have to be changes in national priorities and organisations and a far greater display of decisiveness and political will.

Causes of Inflation in India

Chandra Shekhar, A. K.*

1. Introduction

Between June 1973 and June 1974, the Index Number of Wholesale Prices of foodgrins and all commodities had registered steep advances of 72.7 and 66.3 units respectively (base year 1961-62). This has been the steepest ever annual rise in price in the last 8 years. Since 1971-72, there has been a marked trend of steepening price rises. Both long and short-run factors have been at work in the economy which have given rise to this inflationary situation. This paper is an attempt at identifying the more significant of these contributory factors.

2. CAUSES OF INFLATION

2.1. Agricultural Front

The indices of Gross National Product at current prices and of production of foodgrains (base year 1960-61 and 1961-62 respectively) for 1972-73 were 290.5 and 118.8 respectively. Given that the income-elasticity of demand for food in India is between 0.75 and 0.85, the index of foodgrains prices could be expected to register values between 224 and 243. The actual index value for 1972-73 was 248, which proves that our expectations are not wide of the mark ! The main obvious proximate reason for the price inflation therefore is that the foodgrains production has not been growing fast enough relative to the growth of our total income and high elasticity of demand for foodgrains w.r.t. income. The importance of faster growth in foodgrains in the context of inflation arises from the fact that foodgrains occupy a special position in terms of index number weights.

The slow growth of foodgrains output has been due to institutional, economic, climatic and other factors. Of the institutional factors the land tenure systems, despite land reform legislations, have been a great disincentive to the real tillers to improve the land, add effective inputs and raise the agricultural yields. The agricultural scene, with 30.4% of the population directly engaged in agriculture and more than half of whom are landless, is thus built in with strong dampeners of institutional origin amongst others, which have slowed down the growth of agricultural production. This real factor has been a strong contributory reason for the long-run inflationary trend in our economy.

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Because of the fact that 88.7% of our population is rural, a large proportion of which is directly engaged in agriculture, a significant portion of food output is consumed within the sector itself, leaving a small and highly volatile portion of the total output as marketable surplus. It has been estimated that small farmers owning less than 10 acres each account for as much as 46.5% of the total marketable surplus in agriculture. Empirical studies have confirmed here and abroad that small farmers have fixed cash requirements for their non-food expenditures, and so the marketed surplus from these farmers is a decreasing function of price. This result holds even if the prices of the non-food requirements of these small farmers rise because of the fact that the terms of trade between manufactures and agriculture have been shifting in favour of agriculture from 0.83 in 1965-66 to 0.72 in 1972-73. This aspect dampens the growth of the marketed surplus despite overall rise in agricultural output and this widens the gap between the rates of growth of purchasing power for food and the availability of food for consumption outside the subsistence sector.

The degree of monetization in the economy at the start of the 1960's was of the order of 70% of total national income, 60% of private consumption and 90% of investment. Independent estimate of increase in this percentage of monetized national income is of the order of 0.3% per annum, while the Reserve Bank of India has assumed an annual rate of 1%. Over-statement of the rate of increase in monetization, if any, would increase the money supply beyond the level at which the economy can absorb the same without any abnormal price rise.

Agriculture, forestry, fishing and mining together accounted for 41.4% of the net national product at constant prices in 1972-73. For such a big and important sector, the estimates of credit needs by the All India Rural Credit Survey and the Central Banking Commission amounted to 16% and 12% respectively of the value added in the sector, 70% and 90% of which were being financed by the unorganized rural bankers. The usurious and self-perpetuating unorganized rural credit has been a great dampener to the fast growth of agricultural output in our country. Organized banking is definitely extending its developmental credit to the sector, but the growth so far has been too slow in this direction to make much dent in the alarming price situation.

2.2. Monetary Factors

While fitting a linear relation between money supply and wholesale prices (both in index terms with base year as 1960-61) for the period July 1973 to June 1974, it was found that for every unit advance in the index of money supply the monthly wholesale price index moved up by 0.945 unit with a correlation of 0.7. This shows that monetary factors have been stronger than the real factors in explaining the short-run price rise during the period studied.

Trade, storage, form about 10% of the net national product, and this sector, which is mostly unorganized, has much to explain for recent price rises. 75—90% of the credit needs of this sector has been estimated to be provided by the unorganized bankers, which means that the regulatory arm of the monetary authorities stops short precisely of that sector which needs regulation in the context of present inflation.

A recent work by B. B. Bhattacharya (1972) shows certain very interesting empirical results on the demand for and supply of money in India. Interestingly enough both the money demand and the supply were found to be highly inelastic with respect to interest rate. This then seriously cripples the monetary authorities in their uses of bank rate in curbing credit or encouraging faster growth. Money supply was found to be highly inelastic (near-unity) w.r.t. the unborrowed monetary base of the banks, and money demand was found to be fairly strongly elastic w.r.t. the net worth of the private sector and monetized national income. Save the unborrowed monetary base of banks, the above results only go to show that the monetary authorities have very few of active instruments to regulate the money supply and demand, and through them the price situation.

Bank credit was distributed at the end of March 1965 as industry 61.5%, commerce 25.6%, agriculture 0.2% and others 12.7%. Of this the share of industry and commerce together has remained more or less stable at about 85%, but with industry gaining an increasing share at the cost of commerce. Bank credit has been largely concentrated in the larger orgarnized units in the industrial and commercial sectors, which are located in urban areas. In 1964 two-thirds of the bank credit were concentrated in 5 major Indian cities. Thus monetary control through banks can extend only to a very restricted section of the industrial and commercial sector in the urban areas. This leaves a large lee-way to the unorganized sections of these sectors in their inflationary potential,

Bank credit has been largely in the form of short term credit against inventories and bills. The working capital requirements of the business sector have been rising as a proportion of their turnover because of the increasing uncertainties in the supply of inputs and availability of transport and other vital services. Since bank credit is largely limited to the organized business sector, credit control during inflationary situations actually cuts the output of precisely that sector which productively utilizes credit, and this adds to rather than reducing the severity of the situation.

Roughly 39% of the total assets of the corporate sector is financed by borrowings of which 18% by banks, and the rest by non-bank financial institutions. In India long term credit is scarce and is available only through governmental agencies at rates less than what the market might have demanded. This is to encourage faster growth in the economy through investment in additional physical assets. The short-term credit on the other hand is lent out at more or less market rates of interest. This gives a very interesting interest rate structure of the short-term rates of interest exceeding the long-term rates. This can be explained by the high proportion of short-term savings in the economy, but this fact is distorted if we see the proportion of demand deposits in total deposits with banks, which was reducing from 46% in 1952 to 27% in 1961, since longer term public deposits are more effectively mobilized by the banks, while demand deposits lured by more attractive interest rates are concentrated more in the hands of the unorganized bankers. Thus, the more volatile portion of public deposits is largely outside public control.

The income velocities of money have been fluctuating between 4.5 and 5.85 during 1950-64, the velocity having exceeded 5.0 only in 3 years. Chonasgi has found that the housenold sector, comprising unorganized business, agriculture and individuals, is the strongest determinant of this velocity as compared to the organized business sector. It is precisely on this sector that the monetary control has been least effective so far, which has obvious implications in controlling inflation.

There are a few empirical studies to tentatively show that shifts from demand deposits with banks to loans and advances to the business sector (especially in the unorganized sector) have occurred during phases when the monetary authorities prefer to exercise dear money policies. In the absence of other measures to skin off this part of the money supply, inflationary tendencies in the economy get strengthened.

2.3. Development and Economic Management

Kalecki has very succinctly brought out the condition for a mixed economy to have a non-inflationary growth. If the growth of demand for necessities (wage-goods) per capita be :

$$c_n - q = e(r-q) \text{ ie. } c_n = q + e(r-q)$$

where c_n, q, r are growth rates of demand for necessities, population and total income and e is the elasticity of demand for necessities w.r.t. income. The above relation shows that inflation is inevitable if for a given rate of growth of money income, the rate of growth of demand for necessities is not met by an equal, but a smaller, rate of growth in supply of such necessities. This is precisely the picture of growth in India.

The first four plans had ignored the price aspect. The fifth plan did consider demand-supply equilibrium with a probabilistic model of distribution of consumption. To the extent probabilistic determinism in the matter of distribution of the incremental consumption can be questioned, and to the extent the demand estimates are sensitive to these distribution estimates, the demand-supply gap may widen worsening the price situation.

If the proportion of long-gestation, capital-intensive, slow-paying investments and developmental and consumption expenditures of the government keep rising w.r.t. to the national income, the additional purchasing prower may add to the inflationary condition. There are reasons to believe that this is very much the case in India. Government developmental expenditure as a proportion of net national product has been fairly steady between 1960-61 and 1967-68 at about 4.5-5%, but percentage of government consumption expenditure has risen from 11.1% in 1965-66 to 12.5% in 1972-73. Budget deficits as percentage of net national product have also risen during the period 1965-66 to 1972-73 from 0.8% to 1.8%. According to Bhattacharya, the elasticity of money supply w.r.t. government expenditure was found to be 0.193 and 0.175 respectively for short-and the long-run data. The short-run inflationary potential of such expenditures can well be guessed.

Indirect taxation forms roughly 75% of our tax revenues, and as a proportion of the net national product this has been increasing from 11% in 1965-66 to 13.7% in 1972-73. Because of the highly inelastic demand prevailing in most of the final goods sectors, the intermediate demand elasticities have always exceeded the intermediate supply elasticities, and this has resulted in a heavy cumulative burdening of the final consumers due to heavy intermediate indirect taxation. This has added to not only a short-run inflation but a long-run upward push of prices in the form of a distorted allocation of resources induced by a differential structure of indirect taxation.

Direct taxation has been less successful in bringing incomes generated in the unorganized sector into its tax net than what it has been able to achieve in the organized sector. This allows so much of excess purchasing power to exert their influences on the price level. The bulk of our direct tax revenue has been found to be not much sensitive to productivity rise, innovative efforts, savings propensities, etc. except to the extent that all these are related to the total income level also. Since these aspects are strong accelerators of growth in the economy, the lack of them in the direct tax structure in a significant way has reduced the potential to a fast bridging of the gap between the purchasing power and output.

Protective trade tariffs extended to industries beyond a period justifiable by the "infant industries" argument will be a drain on our resources and will in the long-run prove to be a dampener on our growth potential. If increasing the favorable balance of trade becomes an over-riding objective, and tariffs are so devised as to effect export promotion and import substitution at whatever costs, we may end up with an economic structure where industries would be developed mainly to generate employment at home, increase the purchasing power in circulation within the country without increasing the availabity of output for home consumption. This colonial form of development will be definitely inflationary.

Partial price and quantity controls on essentials, when continued beyond a time which can be justified to relieve short-run scarcities, will shift resources away from precisely those sectors which are riddled with excess demand. Compulsory levy and procurement price-fixation in a few commodities in the agricultural sector have already caused significant shift in acreage from such controlled crops to other crops.

2.4. Other factors

India having an economy largely dependent on agriculture in achieving a fast economic growth has been repeatedly facing droughts, excessive rains, floods, early or late rains, etc. Such erratic climate not only unsteadies agricultural production, because of the meagre financial resources of a large number of our farmers, but induces a slow but steady shift of resources away from agriculture. This will add to the inflationary situation already prevailing in the economy.

Wars between our neighbours and our nation have involved a considerable cut into our investment resources. Our defence expenditure has increased from about 2% in 1962-63 to about 4% in 1972-73. Additional defence expenditures during the wars cause inflationary situation in the country in the short-run, and a rising trend of defence expenditures builds an inflationary element into the economic system itself.

The present oil crisis brought about initially due to the middle-eastern political crisis will increase our price level at home to the extent we depend on imported crude oil and petroleum products. Our long-run ability to step up our domestic production of oil and effect significant substitution of oil by a cheap and abundant local fuel substitute will decide the long-run effect of the present international oil crisis.

Increasing bargaining power of labor, monopolistic tendencies in industry in the use of financial resources and fixing prices, extension of governmental control over more and more aspects of the economy have often led to misallocation of resources. This will have a long-run effect on the price level by way of raising it. A general slackening in efficiency, frugality and honesty will have its slow, sure and painful effect on our economic growth. Black incomes, which have been variously estimated between 5 and 15% of our recorded national income, which cannot be spent on or invested in registerable commodities or assets, will only add to the circulation of unmatched purchasing power. This will jack up the price level.

3. Conclusion

Collecting and summarizing the observations made in the pervious section, we can conclude that the main reasons for the worsening inflationary situation in India are :

1. Purchasing power has been rising faster than output because

of high elasticity of consumption w.r.t. income increasing government expenditures, slow-return investments, etc.

2. Slow growth of output in the agricultural sector due to institutional, economic and climatic reasons, which have proved very difficult to overcome.
3. Monetary control in controlling purchasing power has proved not very effective because of a large unmonetized sector, large proportion of the credit circulating in the economy being in the unorganized sector, poor demand-sensitivities w.r.t. to monetary instruments like the bank rate, etc.
4. Frequent and adverse exogenous shocks like wars, international oil crisis, etc.

Index Numbers of Wholesale Prices
(Base 1961-62=100)

	Week Inded		
	10.8.74	3.8.74	11.8.73
I. Food Articles :	373.7	371.3	299.4
a) Food Grains.	405.9	402.0*	295.3
i) Cereals.	386.6	381.9	269.5
ii) Pulses.	493.6	492.6*	411.5
b) Fruits & Vegetables.	355.6	356.9*	288.4
c) Milk & Milk Products.	343.0	340.5	296.9
d) Edible Oils.	416.4	417.0	359.2
e) Fish, Eggs & Meat.	545.8	540.9*	391.0
f) Sugar & Allied Products.	303.4	299.9*	298.4
g) Others.	286.2	286.6	204.8
II. Liquor & Tobacco :	296.5	297.3*	250.2
III. Fuel, Pewer, Light & Lubricants :	312.7	312.7	190.3
IV. Industrial Raw Materials :	348.3	345.9*	306.9
V. Chemicals :	287.5	287.5*	214.5
VI. Machinery & Transport Eqpt	243.2	243.2*	177.4
VII. Manufactures :	259.2	259.4*	194.3
A. Intermediate Products	341.9	345.3	243.4
B. Finished Products	239.2	238.6*	182.4
All Commodities :	320.4	319.2*	251.3

E=Estimated. *=Revised.

Sources : Ministry of Industrial Development.

Dynamics of Inflation in India

G. P. Mishra*

The current price situation depicts a picture of runaway inflation as the prices of commodities are rising persistently steep in the upward direction without any perceptible indication to stop. The rate of rise in the price level of food articles and other consumption necessities in particular is more phenomenal than the rise in the price of any other commodity. The rising prices of food articles are supposed to contribute sixty per cent or more of the increase in the general price level of commodities. The phenomenal rate of price inflation is disallocating planned investment for growth and causing great public injury and discontent. The impact of this inflationary price spiral on the general mass of the populace is more severe and heart-burning in the economy because of the existence of abject poverty, glaring income inequality, and massive unemployment.

The rising prices of commodities, and in particular of food articles, are benefiting those who produce and have marketable surplus, having the capacity to store and hoard for speculative purposes. But the persons who do not produce output and wholly depend upon market for their subsistence consumption are worst hit by such prices. The landless rural poor, casual labour and daily wage-earners belong to that category of the community who do not produce output and surplus at all, and completely depend upon market for their subsistence consumption. They are worst hit and sufferers because the rising prices of food articles and other consumption necessities prevent them from consuming even bare necessities for subsistence by reducing the purchasing power of money income. The persons of the salaried group are also adversely affected by inflationary price spiral but not as much as the above persons because the fixed income-bracket persons have some fixed source of income in varying amounts to bear some shock of price inflation. Such farmers benefit from the price rises of foodgrains because they produce output and have marketable surplus having

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the capacity to hoard for speculative purposes and do not depend upon market for their food consumption. The wholesale traders who market the marketable surplus of foodgrains securing it from the big farmers and have capacity to hoard for higher price rises, are also the beneficiary of price inflation. The producers and wholesale traders of other non-foodgrains also benefit a lot from price rises even if they depend upon market for their food consumption. Thus the inflationary price situation poses a great threat to the economy in attaining the goal of growth with social justice by increasing the incidence of poverty through increase in income inequality. This situation of adversity stresses the importance of price control in order of priority in the Indian economy.

The Problem

The rise in prices of commodities is not a new feature of the Indian economy. Prices have been rising persistently since the beginning of the Second Plan. Table 1 shows the rising behaviour of prices with their percentage variations during the period of planning in India.

Table 1
Index Numbers of Wholesale Commodity Prices
(Average 1961-62=100)

Yearly/Monthly Average 1	All Commodities 2	Food 3	Raw Materials (Industrial) 4	Manufactures 5
1961-62	100.0	100.0	100.0	100.0
1962-63	103.8	106.5	97.8	102.0
1963-64	110.2	115.4	100.2	104.8
1964-65	122.3	135.4	115.9	109.0
1965-66	131.6	144.6	132.8	118.1
1966-67	149.9	171.1	158.4	127.5
1967-68	167.3	207.8	156.4	131.1
1968-69	165.4	196.9	157.3	132.7
1969-70	171.6	196.8	180.1	143.5
1970-71	181.1	203.9	187.3	154.9
1971-72	188.4	210.3	191.1	167·1
1972-73	207.0	239.6	203.4	176.7
1973-74	254.0	296.0	299.0	205.4

Table 1 Contd.

Yearly/Monthly Average	All Commodities 2	Food 3	Raw Materials (Industrial) 4	Manufactures 5
	Percentage Variation			
1950-51 to 1955-56	−17.3	−23.3	−24.3	− 3.4
1956-57 to 1960-61	+35.0	+38.6	+46.9	+24.3
1961-62 to 1965-66	−32.0	+45.0	+33.0	+18.1
1966-67 to 1968-69	−10.0	+15.0	− 0.9	+ 3.9
1969-70 to 1973-74	+47.6	+50.2	+66.1	−42.4

Sources : (a) Economic Survey (1973-74), Government of India.
(b) Report on Currency and Finance, RBI (various years).

The table indicates how the price levels of commodities have been moving upwardly since 1961-62 without any perceptible fall. The percentage variations in the index numbers of the wholesale prices of all commodities had been significantly very high in the past. Such variations in their price levels are recorded at 47.6 and 50.2 per cent in respect of commodities in general and food articles in particular during 1969-70 to 1973-74. Table 1 indicates that the current price situation has been extraordinary which has been throwing a challenge to planning in attaining growth with social justice and stability.

Paradox

The rise in prices has been persistently steep despite the experience of an all-round progress in the field of production. This is what we find in Table 2. Agricultural and foodgrains productions, and industrial output have gone up at the compound annual rate of 2.9 and 3.0 per cent, and 6.3 per cent respectively between 1950-51 and 1973-74. The real national income and per capita real income have also increased at the rate of 3.6 and 1.5 per cent in order during the same period of planning. The compound annual rate of increase in exports and imports is also recorded to be the same, i.e. 4.2 per cent during the period.

Table 2

India : Some Indicators of Growth

	Compound Rate of Growth During 1st Plan (1951-56)	2nd Plan (1956-61)	3rd Plan (1961-66)	Three Annual Plans (1966-69)	1969-70	1970-71	1971-72	1972-73	1973-74	Between 1950-51 and 1973-74 Total	per year
	1	2	3	4	5	6	7	8	9	10	11
Population	1.8	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	62	2.1
Agricultural Production	4.2	4.0	−1.4	6.2	6.7	7.3	−0.8	−9.1	13.5a	94	2.9
Foodgrains Output	4.9	3.6	−2.5	8.8	6.7	8.4	−1.7	−10.5a	13.8a	99	3.0
Industrial Output[1]	8.2	6.6	9.0	1.5	7.1	4.6	3.1	7.0	0.3	307	6.6
Real National Income	3.7	4.1	2.5	4.3	5.3	4.2	1.7	0.4	7.4a	126	3.6
Per Capita Real Income	1.9	1.9	0.3	2.1	2.9	1.9	−0.6	−1.8	5.2a	40	1.5
Money Supply (Average)	2.0	5.9	9.2	8.6	10.7	12.1	12.1	13.3	17.2	441	7.6
Wholesale Prices (Average)	−3.7	6.2	5.7	7.9	3.7	5.5	4.0	9.9	22.6	184	4.6
Exports	0.3	1.1	4.6	2.3	4.1	8.6	4.7	22.1	22.9	158	4.2
Imports	3.5	7.7	4.6	−4.9	−17.1	3.3	11.7	−2.6	46.7	157	4.2

Source : The Commerce Research Bureau.

a : Estimated by the same Bureau.

1 : data relate to calendar year, e.g. 1969-70.

If the supply side of growth in terms of production is not rosy, we cannot describe it frustrating one. If India is compared with China and other developing nations on the basis of some common indicators of growth, it would be clearly observed. Table 3 points out that Chine has no clear-out superiority over India in the matter of economic progress. This comparative picture of economic performace witnesses that India's progress has been satisfactory in respect of growth in GNP, agricultural and food production, and industrial output. If it is so, why inflation is more phenomenal and acute in India than in China ? With this economic performance, India is facing a great challenge from the persistent rise in prices ; while China has no inflationary problem. Why ? Why are the prices of commodities rising without any perceptible indication to stop ?

Table 3

Economic Performance in Some Developing Countries

Compound Annual Rate of Growth in Terms of Percentage

	GNP*	GNP per apita*	Industrial output	Agricultural and	Food Production
	1	2	3	4	5
Taiwan (1964 prices)	9.0	5.6	17.8**	3.8***	3.8***
Philippines (1965 prices)	8.0	5.1	5.5 c	3.2	3.2***
India (1960-61 prices)	3.6	1.1	6.2**	2.5	2.6***
China (1955 dollars)	3.1	1.1	6.0**	1.7	1.8***

Source : Sinha, R. P., "Chinese Economic Performance", The World Today, January 1974.

* Data refer to the period, 1957-70.

** Data refer to the period, 1957-70.

c Datum refers to the period, 1957-69.

*** Data refer to the period, 1952-70.

Causal Explanation

The persistent character of inflation is generally explained on the basis of the supply-demand theory of value in dynamic perspective. The theory explains that rising demand for output over its supply is responsible for 'upward pull in prices'. Thus the theory may be expressed in the following algabraic relation :

$$\Delta P_t = a\left(\frac{D-S}{S}\right)_t$$

(here S and D stand for supply of and demand for output respectively, P for price level, and a is fraction which is greater than zero).

Assuming fraction a as constant, the greater the increase in the ratio $\frac{(D-S)_t}{S}$ the higher the level of prices and so the rate of price inflation. All the theories of inflation propounded by economists move around this general supply-demand theory of value expressed in dynamic perpective. The 'demand-pull' explanation throws light on the forces which make upward pull of demand over supply resulting into price rises. Such demand-pulling forces may be described as increase in money expenditure owing to growth in credit money, growth in the supply of money, excessive deficit financing, etc. Thus the theory shows that the rising prices of commodities are mostly a function of increase in expenditure and money supply. These demand-pull forces are also applied in the Indian context for explaining the causes of price inflation.

The 'cost-push' theory, on the other hand, assumes that inflation is caused by factors of production trying to increase their shares in the total product by raising their prices. The 'wage-price spiral' explanation is most important aspect of 'the cost-push' theory of inflation. It explains the wage-price reactions as responsible for the vicious character of the inflationary process of price rises. In fact, the theory finally shows how and why the demand for output over its supply increases due to the pressures of wage rises resulting from the presures of trade unions to raise the share of wages in the national product. Thus the theory applied in the Indian context shows that the rise in prices is a result of wage rises in real national income caused by the pressures of trade unions.

Assuming rising prices of foodgrains as most contributory factor of general price inflation, the same supply-demand theory is put forward to analyse the causes of agricultural price inflation but in somewhat different form. The Ricardian thesis of diminishing returns and the Malthusian dynamics of population growth operating in Indian agriculture indicate that food shortage exists on the supply side but demand for food is growing due to increasing pressures of population. The classical quantity theory of money and prices, if applied along with the above, intensifies the viewpoint that the supply of output being inelastic, an increase in the supply of money will raise the price level in the same direction by exceeding the demand for output over its supply. Thus the Ricardian and Malthusian origin of foodgrains shortage and the quantity theory of money and prices explain the scarcity of food and the growth of money supply as responsible for the phenomenon of inflation.

Empirical Evidences

A number of empirical studies made in the context of inflation validate the contention of foodgrains shortage and excessive money supply growth as responsible for the persistent character of price inflation in India. As it appears from Table 2, we observe that the wholesale prices of commodities have increased at the compound annual rate of 4.6 per cent, while the supply of money has risen at the rate of 7.6 per cent between 1950-51 and 1973-74. This table points out that the supply of money has been successively increasing since 1969-70 and the rate of increase in the supply of money has been the highest at 17.2 per cent in 1973-74 and correspondingly the rate of rise in wholesale prices has been 22.6 per cent indicating this rate as the highest in the same period. Table 4 also bears out the same trend. This shows 66.6 per cent increase in the supply of money between 1969-70 and 1973-74. Correspondingly, the wholesale prices of commodities mentioned in Table 1 have increased by 47.6 per cent, 50.2 per cent, 66.1 per cent, and 42.4 per cent relating to all commodities, food articles, industrials raw materials, and manufactures respectively during the same period. These percentages have been also the highest in rise. If percentage variation in money supply given in Table 4 are compared with those in wholesale prices of

Table 4

Variation in Money Supply

Period	Percentage Variation
1951-52 to 1955-56	9.4
1956-57 to 1960-61	23.4
1961-62 to 1965-66	13.8
1966-67 to 1968-69	16.9
1969-70 to 1973-74	66.6

Source: Report on Currency and Finance (various issues) and Reserve Bank of India Bulletin, May 1974, Reserve Bank of India. (Calculated on the basis of data taken from these sources).

commodities shown in Table 1, some contradictions may be observed between them. During the First Plan period the supply of money went up at the rate of 9.4 per cent, while the wholesale prices declined with sharp downtrend, except the wholesale prices of manufactures which went down by 3.4 per cent. The trends of increase in money supply and wholesale prices seemed to be positive as with 23.4 per cent increase in money supply, the wholesale prices of all commodities, food articles, industrial raw materials, and manufactures rose at the rates of 35.0 per cent, 38.6 per cent, 46.9 per cent, and 24.3 per cent respectively during the Second Plan period. The supply of money rose by 13.8 per cent during the Third Plan, which is much less than 23.4 per cent obtained during the Second Plan period. The wholesale prices of commodities did not have significantly perceptible decline rather were maintained high, except in case of industrial raw materials. The wholesale price of industrial raw materials went down by 0.9 per cent during the period of 1966-67 to 1968-69 in spite of 16.9 per cent increase in the supply of money. But the percentage variations in the wholesale prices of commodities have been positively the highest and so in the supply of money between 1969-70 and 1973-74. Following the above contradictory results, can we impute growth in money supply to inflation ? The statistical techniques of analysing the rising behaviour of prices in relation to growing money supply have both the capacity to make quantitative observations and the ability and skill to conceal the reality of the phenomenon that exists. The techniques of statistical correlation and regression will succeed in exposing the relation between prices and money supply which are known variables. But how they will succeed in explaining the behaviour and impact of unknown and unquantifiable variables like black money and hoarding on the prices of commodities ? Hence the above contradictions have their own value and shed doubt over the validity of the result that growth in money supply is responsible for price rises.

Food Shortage

On the supply side, the existence of food shortage is ascribed to the current inflationary price situation. The application of the Ricardian thesis of diminishing returns with the Malthusian dynamics of population growth in Indian agriculture bears out the case of food shortage and growing demand for food in excess of supply as the causes of agricultural price inflation. If the annual rates of growth of population and per capita real income, 2.2 per cent and 1.5 per cent respectively, obtained between 1950-51 and 1973-74, are taken into account with assumption of 0.6 as the income elasticity of demand we may calculate increase in the demand for food as follows :

$$\begin{aligned} D &= ny + P \\ &= .6 \times 1.5 + 2.2 \\ &= 4.3 \end{aligned}$$

(D stands for demand for food, y for rate of increase in per capita real income per annum, and n for the income elasticity of demand for food).

This implies that the demand for food is growing at the rate of 4.3 per cent per annum and so the supply of food should increase at this rate in order to match the increase in the demand for food. Table 1 shows that foodgrains production has been increasing at the rate of 3.0 per cent per annum during the period of 1950-51 to 1973-74. Thus the shortage of foodgrains runs in terms of 1.3 per cent per annum. Assuming this rate of food shortage is occurring in the economy, an extra amount of nearly five million tonnes or more of foodgrains is required to feed the million Indians, if the country is assumed to be producing 100 million tonnes of foodgrains.

This foodgrains shortage is supposed to be a product of instability prevailing in Indian agriculture. If the degree of foodgrains instability is measured in terms of the proportion of food import to

Table 5

Foodgrains Output and Imports

(in million tonnes)

Year	Foodgrains	Imports
1950-51	54.9	4.80
1955-56	69.2	1.44
1960-61	82.0	3.49
1965-66	72.2	10.36
1966-67		8.67
1967-68	95.1	7.4
1968-69	94.0	3.9
1969-70	99.5	3.1
1970-71	108.4	2.4
1971-72	104.7	1.2
1972-73	100.0	2.5

Sources : (a) Report on Currency and Finance, IBI (various issues).
(b) Indian Agriculture in brief, (11th edition), Govt. of India.

its total production, it varies from 5 per cent to 10 per cent. Table 5 shows that the import of 10.36 million tonnes of foodgrains had been maximum in amount obtained in 1965-66. The table indicates that amount of maximum 5 million tonnes of food import is required per year by assuming 5 per instability in food production.

The degree of this instabilty in Indian agriculture seems to be less pronounced in the present than in the past as Table 5 bears out. Assuming instabilty as one of the most significant causes of inflation, the rate of price rise should have been mere phenomenal in the past than what it is in recent years. If the spurt of new food technology has not succeeded in reducing the instability of food production fully in agriculture, we can surely admit this fact that it has reduced it to some extent by stabilising the output of foodgrains at 90 million tonnes against the spell of some serious droughts that occurred between 1969-70 and 1973-74. At least, the new wheat technology has been a grand success in overcoming the uncertainty of some large part relating to wheat production. But the current inflationary price spurt has been more alarming despite this drought-counteracting impact of the new food technology in Indian agriculture. Why has then there been such price spurt in recent years ?

Myth of Malthusian Dynamics

There is a popular belief that the Malthusian dynamics of population growth is the important cause of food shortage in India and so the gravity of the inflationary situation existing therein. Table 2 indicates that the rate of growth of population has increased by 2.1 per cent per annum between 1950-51 and 1973-74, while foodgrains output has grown at the rate of 3 per cent per annum between the same period. "In the international context such a rate of growth of agricultural output is respectable". (R. P. Sinha). Dr Sinha writes in his 'Defects in Food Policy' : "Most countries (except the USA, Canada, Australia, France, Maxico, Argentina, Thailand, Burma, and, in the normal times, the Soviet Union) are deficit in food. Many developed countries such as Japan, Britain, West Germany, and Italy import much more than India both in absolute and per capita terms. These four together, with a population of 300 million, import on an average 32 million tonnes a year ; Japan alone imports nearly 14 million tonnes and the other three between 6 millon and 8 million tonnes each". But India, with a population of 540 million, imports between 5 and 6 millon tonnes. This implies that the Malthusian dynamics of population growth has been a myth to show it as a cause of food shortage and so of rising foodgrains prices.

Hoarding and Keynesian Dynamism of Money

The problem of food shortage is not new but old which is continuing ever since the inception of planning in India. But the problem is currenrly made more acute by its artificial creation. Food shortage is artificially created more than what it actually exists because of the operation of two forces—hoarding and the Keynesian store-value function of money. The motive to hoard and the Keynesian character of the store-value function of money are self-supporting in operation leading to the play of speculative games in wholesale trade of foodgrains and other commodities. The hoarding motive is a most distinguishing feature of the private system of wholesale trade in commodities that is operated for profit maximisation. And so it is an in-built institutional character of the wholesale trade system. The Keynesian dynamism of money, i.e. store-value function of money, leads to the play of the speculative games. That function of money is also a result of the private system of trade which functions on the basis of the money-oriented mode of exchange and distribution of commodities. Thus the greater the motive to hoard, the greater the Keynesian dynamism ; and the greater the supply of money resulting from excessive expenditure, credit money, and deficit financing, the greater the Keynesian dynamism leading to more speculation. This mode of operations results in the creation of shortages and price rises.

The big farmers who constitute less than 20 per cent of the total rural households, produce marketable surplus of foodgrains and sell that marketable surplus to wholesale traders through intermediaries. With the store-value of money, they possess the capacity to hoard. The greater the Keynesian dynamism of money, the greater the capacity of the farmers to hoard marketable surplus and so a situation of shortage is created and prices are pressed up to rise. The wholesale traders who market marketable surplus from the big farmers during the harvesting season at lower prices, hoard a part of it for the creation of artificial shortage in anticipation of higher prices in the season that comes after harvesting. The capacity of the traders to hoard marketed surplus increases with increase in the dynamism of money which results from increase in the supply of money through a number of monetary channels. This play of the farmers and traders becomes easier and smoother if the distributive channels of foodgrains are not properly directed and regulated. Moreover, the play is also easier if black money, (i.e. unaccounted money) grows through time in the economy. The growth of black money raises the dynamism of money in storing and hoarding commodities as a result of which the shortage is facilitated and prices are pushed up high.

Fate of Income Immobilisation Policy

The government in its 'war' against inflation promulgated three ordinances to immobilise money income by impounding a part of additional wage and dearness allowance increases, by imposing a ceiling on dividends and by tapping money through the compulsory deposit scheme. The purpose of such three-pronged attack on inflation is to control price level from rising by immobilising 5 per cent of money growth. The success of the three-pronged anti-inflationary attack depends on two conditions.: (a) how and to what extent money income growth is responsible for the current inflationary price spiral; and (b) how and to what extent the immobilisation of money growth in excess will check prices from rising persistently in upward direction.

Our discussion on the problem made above indicates that the accountable monetary expansion resulting from expenditure and income increases is not inflating and spiralling the prices. It is done by the speculative hoarding and black money growth. If we admit this as factual, it can be held as truth that the income immobilisation policy measures will not control the inflationary trend of price rises from moving further high in the upward direction.

Let us assume for a moment that the present inflationary price situation is monetary in character and origin. Even if we assume so, these so-called anti-inflationary measures will not control prices from rising because of the following: First, the ratio of money stock to national income is estimated at 1:5. This means that a reduction in the income of Rs 5 is needed for curbing money supply by Re 1. And so the reduction of the national income by Rs 500 as a result of the impounding of a part of increases in wages and dearness allowance will reduce money supply growth not by 5 per cent but by 1 per cent. Secondly, the income of the wage-earning and salaried class-people constitutes only 33 per cent of the total income in the entire economy, while 43 per cent of the total income falls under the group of 'self-employed' that is not accountable. Thus the immobilisation of income through impounding of a part of additional wage and D.A. rises will curb a very small part of the money income and so the consequential impact on price rises will be insignificant. Thirdly, the income immobilisation through the Additional Emoluments Ordinance and the Compulsory Deposit Scheme will cover an innocuous segment of 18 million salaried persons in the organised sector that employs less than 5 per cent of the total population of the country. This sector contributes even not more than 20 per cent of the rural income and 43 per cent of the total urban income. This shows that the coverage of the ordinances being small in number and dimension will have a negligible impact on price rises.

Table 6

Structure of National Income

	Percentage of National Income	Agricultural Income	Non-Agricultural Income
1. Wages & Salaries	33	18.6	46.7
2. Income from Property	24	20.3	30.7
3. Self-employed's Income	43	61.1	22.6
4. Total	100	100.0	100.0

Source : The Economic Times, July 8, 1974.

Table 6 indicates that the incomes of self-employed and from property constitute a major part of the national income in India. The income immobilisation measures through the ordinances will fail to cover the persons belonging to the self-employment and property groups of the population. A major part of the unaccountable money flows into the pockets of the persons of the above groups.

The above analysis indicates that the policy measures of the government for immobilising income will not influence the flow of accountable money significantly and so doubt sheds over the efficacy of the measures in controlling price inflation.

Assumiug the inefficacy of the immobilisation measures in controlling price rises in case of the organised monetary sector, they will have no impact on price rises at all if there exists an unorganised monetary sector because of the expansion and growth of black money leading to the creation of a 'parallel economy'.

Dear Money Policy

Assuming inflation as a monetary phenomenon, the strategy of dear money policy was adopted in June 1971. The Reserve Bank of

India stepped up the bank rate from 5 to 6 per cent in that year. Since then the RBI adopted this policy to put curbs on credit expansion and to encourage savings for pumping out extra money from the pockets of the individuals. In April 1973, the RBI raised the Bank Rate to 7.25 per cent on deposits per year. In May 1973, the lending rate was also stepped up to 10 per cent and further to 11 per cent in December 1973. From the general experience and data on prices we find rising prices of the persistent character in spite of steep rises in the Bank Rate and lending rates on deposits and credit for restricting the supply of money. This implies two things : firstly, the dear money policy has little amount of influence over the whole monetary sector because of the existence of an uncontrolled 'parallel money economy' resulting from the flow of black money ; and secondly, the organised monetary expansion or contraction has little to do with price inflation ; and the latter is persisting due to non-monetary force.

Conclusion

The current inflationary price situation is neither a product of the Malthusian dynamics of population growth and food shortage nor a consequence of money supply growth (i.e. demand), but it is the result of the speculative hoarding and black money growth. The speculative hoarding exists and operates because of the regulation and control of marketable and marketed surpluses of food and other essential commodities by a few big farmers and traders. The play of the speculative hoarding games becomes easier due to the store-value function of money and this Keynesian dynamic function of money operates with greater speed and intensity if hidden unaccountable money grows and flows without any restriction. Hence the flow of marketable and marketed surpluses of edible commodities should be regulated and controlled which is possible either by nationalising the wholesale operations of trade in such commodities or by importing enough food articles for the building up of their buffer stocks. In addition to this, the control of black money is essential. It seems to be difficult in the presence of the right to property. If some curbs on rural and urban property are not put on, there may be difficulty in uncovering that money in order to convert it into white one. The procurement price policy which is formulated and operated on the basis of price-response hypothesis of production will neither procure desired food stocks for distribution nor check prices from rising. Our experience shows that the procurement prices of food-grains have been always chasing their market prices and so the policy is yearly setting of a floor below which the market prices of food articles are not expected to fall but to shift upwardly. Hence thorough over-hauling of agricultural price policy is also required if we feel genuinely inclined to control prices from rising. If such changes in policy-making are not made, doubts will always persist over the control of price inflation.

Taxation of Agriculture in India

H. N. P. S. Suman*

I

Agricultural land taxes can be an important source of development finance in underdeveloped countries. In developing countries adequate taxation of the farming sector is more important than it is in advanced countries, since it has a special contribution to make to the smooth process of development. In underdeveloped countries the agricultural sector is the largest sector of the economy and contributes about 80 per cent of the national product. If this sector remains untaxed or lightly taxed, either the burden of taxation will be shifted to other sectors or the economic growth may slow down for lack of adequate finance. Again, in such countries the agricultural sector has gained much as compared to other sectors. If this sector is undertaxed the gains will be enhanced at the cost of other sectors. For example, in India although the income of the agricultural sector increased, on an average, by 11 per cent a year between 1950 and 1970 and the prices of farm products went up by 48 per cent during the Third Plan period against the 25 per cent gain registered by industrial products, hardlv any effort has been made to mop up the additional gains of the former. As a consequence, the burden of taxation has been shifted to non-agricultural sector.

It may be noted that the taxation of agriculture has the advantage of bringing in more revenue for economic development and at the same time creating a marketable surplus of foodgrains in so far as taxes on land compel the farmers to sell their surplus produces for paying off their dues. The creation of marketable surplus has further advantage of checking abnormal rise in prices of foodgrains which generally accompanies the initial phases of economic development in underdeveloped countries.

Check on Consumption and Incentive to Production

In underdeveloped countries some check must be imposed on consumption in order to provide adequate finance for growth. This

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provides us with a strong case in favour of taxation of agriculture in underdeveloped countries. Apart from this, the United Nations Mission of Technical Assistance to Bolivia pointed out that the low taxes on rural land make it easy to hold large tracts idle for speculative or prestige reasons. A substantial tax on land would increase the carrying costs of idle land and would tend to force it into its most productive use. Professor Kaldor has strongly emphasized the role of land in underdeveloped countries. According to him it is not the availability of natural resources such as land or knowledge or ability which limits production but the customary way of life of the agricultural population, who prefers a maximum of leisure and a minimum of material income, and therefore works just hard to cover their immediate and traditional needs. "In such circumstances additional taxes levied on them would tend to make them work harder and produce more—i.e. to reduce their leisure, rather than their standard of material consumption". Such taxation would act as an incentive to produce in developing countries and if the increase in taxation is gradual, it will not meet with much opposition.

The high rate of economic growth experienced by Soviet Union and Japan has been made possible to a large extent by the active role which agricultural taxation has played in those countries. The forced collection of grains between 1920 and 1940 contributed a lot to the initial stages of economic transformation in Soviet Russia. In Japan, agricultural taxes were the principal instruments in forcing a surplus out of the smaller farmers. The resources mobilized in this way were undoubtedly great and contributed significantly to a high rate of capital formation (FAO). The Japanese example is of special interest for underdeveloped countries specially falling in South-East Asian region because they have the same features which characterized Japan during the early stage of its development—a traditional agriculture having small-scale subsistence farming dominated by social relationships of a hierarchical or feudal character. The important lesson to learn from the Japanese experience is that in the initial stages of development of an underdeveloped country, agriculture must provide the major part of the funds needed for economic development.

II

Trends in India

On the basis of the facts set out in Part I we can say that taxation of agriculture can play an important role in economic

(Continued on page 475)

Inflation In India

K. Venkata Reddy*

In recent years, perhaps no other problem has shaken confidence in the economic and political future of India so much as the inflationary crisis of today. The price rise in 1973-74 was higher than in any single year since the second world war. The trend still continues. People at large, who have the reason to expect something better from the planning in India have begun genuinely to doubt the performance of planning in achieving its often declared twin objectives of higher production and equitable distribution. In the midst of talk of higher targets and reports of higher level of achievements of food production, the consumers in general are scared by the scarcity of necessaries of life, more particularly food and its soring prices. The social, economic and political consequences of sharp rise in prices are bound to be serious and combating inflation has become the primary task of the government.

Causes

In the low-income countries the income elasticity of demand for food is of the order of 0.6, which is twice or thrice of that in Europe, the U.S., and Japan (Mellor 1969). In an under-developed country like India with low nutritional standards, any rise in income is most likely to increase the demand for food and more diversified food stuffs. When the food supply does not keep pace with the growth of the demand, food prices soar up and higher levels of food price have their effect on the industrial sector. Higher food prices lead to demand for higher wages by the trade unions, and the payment of higher prices of industrial products. It is difficult to explain the inflation in terms of trade union pressure on wages. That wages should rise is acknowledged as quite natural and in fact inevitable. Whether prices or wages have been leading the way, may be a controversial question—chicken or egg first. Rather, each has apparently been leading in turn. Wages, prices and aggregate demand have all

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been going up more or less together. However, wage rise is bound to lead to inflation, if wage rise is more rapid than productivity of labour. It appears that It appears than inflation in India is a combination of demand-generated-inflation of food price and cost-generated-inflation of industrial prices.

In the process of economic growth very often there is the possibility of the growth rate of one sector lagging behind the other and this sort of disequilibrium leads to inflationary conditions. It is rightly observed, 'if development in an underdeveloped country is taking an 'unbalanced' from with industrial development outstripping that of agriculture to such an extent that a shortage of food and agricultural raw materials develops, then it is most likely to be accompanied by severe inflationary pressures' (G. Mynard). This observation holds good in the case of India. During the first four years of the Fourth Plan period, while the actual performance of both the sectors, manufacturing and industrial, fell short of the targets, it could be noticed that the growth rate of farm sector lagged behind the industrial sector. The following table speaks of the relative growth rates.

Achievement

(Per cent)

Sector	IV Plan projections	1969-70	1970-71	1971-72	1972-73
Agriculture	5.0	5.1	4.7	−1.7	−5.5
Mining and manufacturing	7.7	5.2	1.8	2.9	4.2

Source : Draft Fifth Five Year Plan, 1974-79, Vol. I, p. 26.

The relatively better performance of industrial sector has led to growing demand for food and raw materials. In view of inadequate farm production, demand-pull inflation of food prices, and consequently cost-push inflation of industrial products, present themselves in a most serious way.

The tempo of urbanisation has been pretty high during the planning era. Urban population in India was only about 15% of total population in 1947. It increased to 20% in 1971. Generally the incomes of the people in the organised sector like industry, banks, transport, etc. are relatively higher leading to growing demand for better variety of food like rice, etc. Now, not only the income elasticity of demand for food is high, but the income elasticity of demand for clothing, etc. will also be high. This development is also leading to greater pressure on farm production resulting in rise in farm product prices.

The most common explanation offered for rise in prices is expansion of money supply attributed mainly to deficit financing by Government, out of borrowings from the banks. It may be argued that money supply which includes currency and demand deposits has gone up enormously in the economy in the last four years, leading to excess demand over supply. During the planning era huge amounts are spent on various projects, the fruits of which are yet to be realised fully in view of long gestation period of some of the projects. More money has come into circulation long before addititional production could flow into the market and this again accounts for rise in prices.

Prof. V. M. Dandekar and other economists seem to be of the opinion that increase in the money supply is primarily responsible for sharp rise in prices. Following this line of reasoning, Prof. Dandekar has suggested that 'the Fifth Plan shall totally eschew deficit financing and the central and state governments shall not resort to borrowing from the banks to finance their normal, abnormal, planned or unplanned expenditure". Professor K. N. Raj, commenting on the opinion of Prof. V. M. Dandekar, observes, 'explanations and policy conclusions which attach so much importance to money supply can be very misleading". In support of his point, he states that in India money supply increased by 12½% in 1970-71 and over 14% in 1971-72, while the general level of wholesale prices rose no more than 2½% and 7% respectively in these two years. The difference was made really by the more abundant supply of agricultural commodities, more particularly of foodgrains in 1970-71 and 1971-72. Therefore Prof. K. N. Raj observes "it is usually assumed that that there is a stable relationship between money supply and total effective demand in the economy. It is precisely this which has been in dispute".

In a shortage economy like ours, the temptation to hoard on the part of the consumers for fear of future shortages and of producers and traders in expectation of bigger profits in sellers' market are strong. Further, Indian economy is characterised by the fact that the income generation pattern is very uneven. This disparity causes extremely unequal economic power to bid away essential commodities in the market. In the absence of public distribution system, whenever the production of essential commodities comes down, the disparity of economic power comes into full play. Very often there is speculative hoarding by producers and also of traders which is facilitated by black money. During 1972-73 there was a sudden drop of food production to 98 million tonnes from 112 million tonnes in 1971-72. The fall in the production of coarse grains like jowar and bajra was much higher. The position in 1973-74 was no better. As production declined, prices of essential commodities started moving up on account of uneven purchasing power. In these years, because of drought, availability of power also went down, thus causing decrease in industrial production. So the total availability or supplies of commodities went down further. Because of the relatively low incidence of direct taxation, particularly agricultural taxation, and large scale evasion of taxes by the rich, government revenues did not rise significantly. The government, as its committed responsibility, had to spend on drought relief and other social services. It had to resort to deficit financing which further increased aggregate demand in money terms. In such a situation, psychology of further price rise began to be dominant. This led rich peasants and trading community into speculative hoarding of essential commodities and this decreased the supplies of goods in the market.

Measures taken by the Government

Many suggestions are given by persons of different walks of life. Under the headship of Prof. C. N. Vakil, a panel of economists suggested a scheme known as 'SEMI BOMBLA'. (Scheme of Economists for Monetary Immobilisation through Bond Medallions and Blocked Assets). It is said that price level can be reduced by 25% within a month. Under this plan there would be 30% cut in money supply by reducing the value of 100 rupee currency notes and blocking a part of banks accounts and introduction of compulsory and voluntary schemes. Under this scheme 100 rupee notes are to be stamped for Rs. 70/-. For notes between 1 and 50, gold plated medallions will be offered for sale at Rs. 50/- each which can be cashed after 10 years. If this scheme is implemented, it would be a major operation to the disease. The success of it would depend on various factors, the most important being the cooperation of the people at large with the monetary authorities. This scheme aims at solving the problen through monetary measures only with little consideration of production of real income. The government does not seem to be favourably considering the proposal for implementation.

Two Ordinances were issued impounding the distribution of dividends payment of additional D.A., and wages. Further through another Ordinance, compulsory deposit scheme was initiated and such of those whose annual income is Rs. 15,000/- to Rs. 25,000/-, the rate of compulsory deposit is 4% ; for those whose annual income is between Rs. 25,000/- and Rs, 70,000/- the rate of deposit is 6% ; and if the annual income is more than Rs. 70,000/- the rate is 8%. Further, the Reserve Bank of India has increased the bank rate from 7 to 9%.

The merit of all these measures is that they help to reduce money in circulation and encourage savings which would ultimately help to contain price level. But doubts are expressed in some quarters that these steps would only create scarcity of finance for productive purposes. Therefore, while implementing these different schemes care must be taken to see that production does not suffer in any way. The government expressed their desire of stricter regulation of credit to ensure that needs of priority sectors of the economy are adequately met, more efficient enforcement of tax laws to check evasion and concerted effort to reduce non-developmental expenditure. The government have also affirmed their intention to maintain and to further strengthen the public distribution system. These steps indicate that an earnest effort is being made by the government to tackle the problem of inflation.

Agricultural Production Versus Price Levels

Prof. K. N. Raj rightly remarks, 'In a country so heavily dependent on agriculture, what happens is agriculture sets the pace for almost everything else. Price stability...depends not so much on financial balances as on the availability of food and raw materials for meeting the minimum requirements. It is the imbalances in this sphere that have been responsible above all for most of the phenomena recently in evidence".

If we examine the relationship between agricultural production and general price level during the planning era in India, it can be clearly noticed that there has been inverse relationship between the two—higher level of agricultural production, more particularly food production, resulting in fall in the general price level and fall in the agricultural production resulting in rise in the general price level. From one plan to another plan period there have been wide variations in the price levels in India. During the First Plan period, the fall in the general price level was 17.3%. It is to be noted that the actual foodgrains production was 65.8 million tonnes as against the First

Plan target of 61.6 million tonnes. In the Second Plan, inflation has assumed a serious dimension and the general price level increased by 35%. It may be pointed the actual food production at the end of the Second Plan was 79.3 million tonnes as against the Second Plan target of 80.5 million tonnes. Similarly the rise in general price level to the extent of 32% in Third Plan may be attributed to poor performance of agricultural sector. The actual production in the last year of the Third Plan was 72.3 million tonnes as against the Third Plan target of 100 million tonnes. One of the reasons for sharp rise in the prices of foodgrains in 1973-74 was the fall in foodgrains output caused by drought, etc. and this led to increase in general price level in the country.

Conclusion

The problem of high prices in India has to be viewed in a much wider context than the financial balances. Adequate supply of food and other minimum requirements of the population is far more important to contain inflation rather than placing too much faith in monetary and fiscal instruments alone. The lasting solution to inflation is higher production, particulary of essential consumer goods and wage-goods. The psychology of scarcity behind rising agricultural prices will disappear if the outputs of all crops, be they foodgrains or commercial crops, increase progressively and sufficiently, to obvitate the need for any type of control. Since agriculture accounts for the bulk of the wealth of the nation, such a development will help to bring down inflation sizably, besides providing the means to sustain larger industrial production. This cannot happen overnight as basically it is a long-term problem. To achieve this, we have to modernize agriculture with the application of moderen inputs like fertilizers and the H.Y.V. seeds. The Green Revolution which is now confined to selected crops like wheat and rice should be extended widely to other coarse grains and also pulses. Further the Green Revolution so far is limited to irrigated cultivation and it should be extended to dry areas and dry crops. The small and marginal farmers, including the tenants, should be made active partners of Green Revolution both in increasing and in sharing the output. Credit, being the most crucial input, must be made available to the needy farmers adequately and in time. Credit to rich farmers and traders has to be curbed, as these are being used for speculative purposes and

(Continued on page 466)

Inflation in India : Its Nature and Problem

Sadhan Chandra Das*

Inflation is an epidemic from which the economies of almost all the countries of the world have been suffering. Indian economy is not and cannot be an exception to it Rather in a developing economy it is a blessing in disguise. But the degree and extent to which it has been suffering have been a cause of worry not only to the economists but also to the people at large who happen to be unfortunate victims of the situation.

Inflation as it is commonly understood is an increase in price-level followed by an increase in the supply of money compared to available goods and services in the market. In other words, it is a disproportionate increase of aggregate demand compared to availability of goods and services. Increase in effective demand is again backed by an increase in flow. of effective money due to currency expansion, deficit financing, increase in bank credit and or increase in the velocity of circulation.

From 1961-62 to 1973-74 money supply has increased from Rs. 3,046 crores to Rs. 10,750 crores i.e., roughly 11 per cent expansion a year. During the past three years rate of money expansion has been nearly 15 per cent. While during the same period National Income at constant price has increased only by 45 per cent, i.e., an average of 3 per cent a year. As a result general price index of wholesale prices has increased by 154 per cent, taking 1961-62 as base year. In other words, rate of increase of wholesale price has been roughly to the tune of 8 per cent a year. This is the direct result of deficit financing to bridge the gulf between Government expenditure and revenues.

Aggregate or average tells us only the trend ; but the tendency of inflation in current years is really alarming. The year 1973-74 ended in a record rise of 23 per cent as compared to 10 per cent rise in 1972-73. This is perhaps the highest record in our 25 years of planned

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economy. In fact these days we observe an average monthly increase of 2.5 per cent of wholesale prices. The figure for August 1974 has come to 3 per cent and this is after the promulgation of Ordinances to curb the inflation. Naturally the question arises in the mind : Where this inflation-based economy will lead us to ?

The gravity of the situation has compelled the Government to promulgate two Ordinances imposing temporary restriction on dividends and enforcing compulsory deposit of additional emoluments for industrial workers and salaried employees. It is too early to comment on the effectivness of the ordinance ; but one thing is absolutely clear is that it has adversely affected the vast majority of the people who had already tightened their belts to the last point. As such the risk of dissatisfaction and disloyalty to the Government is growing day by day.

A brief but comprehensive analysis of the factors inside the planned economy that have been marked responsible for this situation is necessary to grasp the totality of the problem. One of the greatest blunder of the Planning Commission is the assumption of stability of price level. In practice price level has been anything but stable. It was only during the First Five Year Plan, that there has been comparative stability of prices and in fact the price level at the end of the First Plan was lower than at the beginning. The menace of inflation started from the Second Plan period. The general level of wholesale price increased by over 35 per cent or at a little over 6 per cent a year. This trend continued till the end of the Third Plan. During the three Five Year Plan periods, price level reached a record high in 1966-67 to the tune of 13.9 per cent a year. This was due to unprecedented drought. There was enough recovery in the following years and the year 1968-69 showed comparatively a small reduction of 1 per cent. But the tendency in general was so high that the Fourth Five Year Plan experienced the highest record in general price level, over 9 per cent a year on the average. What is more alarming is that during this period increase in prices of foodgrain was much more steep due to shortage of production as a result of severe drought and failure of monsoon.

People at large are hard hit at this situation and there has been persistent demand for higher wages to live up with the increased cost of living. In most of the cases the Government and in some cases private entrepreneurs had to bow down to the increased demand of employees by raising Dearness Allowance or through revision of pay scales.

Flow of additional money to the pocket of wage earners speeded up the trend of inflation the result of which is reflected in 2.5 to 3 per cent increase in price level every month. The increased D.A. and increment in wages have given a slight relief to the organised white-collars ; but the condition of the peasants and unorganised labourers who form the vast majority has been worsening day by day. Unless and until something is done in concrete for these people the healthy growth of economy is bound to hamper and all planning, however ambitious it may appear, is bound to meet an utter failure.

Here comes the question : how to fight against the inflation. The menace of inflation can be attacked from three points, viz. (1) production, (2) distribution, and (3) fiscal and monetary measures.

There is no doubt that national increase in productivity and production only can solve this problem. But it cannot be achieved overnight. India is predominantly an agricultural country and agriculture is still at the mercy of nature. In spite of completion of quite a good number of projects flood and drought still cause crop failure in some parts of the country every year. It will take some more years of scientific and technological research to overcome the inclemencies of nature. The rate of progress in this line is not very encouraging. As such basically it still remains a long term policy. Meanwhile concentration should be laid more on enquitable distribution of products. It is the common opinion that problem of Indian economy is not of production. Success of public distribution programme depends on effective procurement programme. Procurement policy of the Government is based very much on calculated and scientific principle. Still the Government is failing of late in procuring food grains and finds it very difficult to maintain the rationing in the country. The defect lies not in the policy but in the machinery through which this policy is executed. It is more a problem of socio-politics than of economics. In fact, the pattern of democracy through which this machinery is functioning has proved to be absolutely useless and it is high time for the Government to do something concrete in strong hand to overcome the hindrances in procuring food grains. No civilised Government should tolerate politics with human hunger. Let us hope that the Government should learn from the past failures and come forward with all strictness to gain confidence of the people for whom it is supposed to belong.

Coming to the aspect of fiscal policy of Government to control inflation, we may safely say that traditional weapons of taxation and strict credit policy have utterly failed to deliver the goods in its cold war with parallel economy run on black money. In fact the very existence of this parallel economy is creating menace to the success of any programme adopted by the Government. And the people are utterly surprised to watch the degree of silence on the part of the Government to crush it. For perhaps we are living in a "democratic" set-up. Naturally it arises one question in our mind, if this set-up is strong enough to snatch away the meagre increase of additional wages of the wage earners, who are the worst sufferers in any inflationary situation, how can they remain silent on the lion's share consumed by the hoarders and black-marketeers ? Only very recently we observe that the Government machinery has been able to arrest some of these black-sheep. But people are so much frustrated that they are not satisfied with this drama. They want to see the result. They like to see how it pulls down the price line. Herein comes the question of integrity of the set-up running the administration. People have got enough reasons to doubt its integrity and expect very much that the government should do something concrete at least to save its own skin !

(Continued from page 462)

not for increasing production. It becomes necessary to step up and diversify the production base of small and marginal farmers. This will break the nexus between the rich farmers and the trading community and release our food economy from speculation and hoarding. To achieve this successfully, public distribution system should be strengthened and the government must take up the responsibility of supplying essential commodities to the vulnerable sections of the community. This system has to be efficient and adequate. The government has to mobilise resources for productive purposes and also reduce drastically its wasteful expenditure so that deficit financing may be avoided. In order to beat the blackmarketeers and the hoarders, the government should not mind, as a short term measure, a little foreign exchange outgo and to dump the market with imported articles at least of essential consumption.

Taxing the Interest Incomes of Indian Scheduled Banks

C. D. Maheshwari*

It is the first time anywhere in the world that a government has imposed a tax on scheduled banks' income from loans and advances. This is a novel measure and the closest resemblance to this, in the form of a tax on banking service, is to be found in U.K., where there is a stamp duty on bank cheques.

The Supplementary Budget presented on the 31st of July, 1974 in the Parliament, proposed to levy a tax on the gross amount of interest received by scheduled banks on loans and advances made in India. The tax has been levied at the rate of 7% of the gross amount of interest earned by the banks. Interest on government securities, as also debentures and other securities issued by local authorities, companies and statutory corporations will not be included in the tax base. Interest received on transactions between scheduled banks will likewise be exempted from the proposed levy. Interest accruing to scheduled banks before 1st August, 1974 will be outside the ambit of the proposed measure. The proposed tax will be allowed as a deduction in computing taxable income under the Income Tax Act. The yield from this measure will be of the order of Rs. 60 crores in a full year. For the remaining part of the current year, however, the revenue will be about Rs. 25 crores.

The banks are supposed to adjust their functioning to this novel tax and reimburse themselves to the extent necessary by making appropriate changes in interest rates, charged from borrowers. This would imply on an average an increase of about one percent in the cost of borrowings from the banks. So this taxation measure would imply a further indirect revision of the bank rate by one per cent. The government does not want banks to absorb a significant portion of this new levy expected to yield Rs. 60 crores in a full year.

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Scheduled banks including the nationalised ones are not unanimous in their opinion on the possibility of passing the entire burden of the seven per cent tax to borrowers. The smaller nationalised banks feel that the interest rates can be raised by full one per cent but the larger banks have some different opinions in this regard in view of the already current high level of interest levied by them on borrowers. Certain banks have pointed out that small industrial units, new units in the large sector and other weaker sections of the borrowers would be adversely hit by a further upward revision in the interest rates. If the weaker sections of borrowers are not charged higher interest rates, the cost burden would rise by more than one per cent for other affluent borrowers. If the banks resort to discrimination in respect of interest rates among different borrowers, they would thus be exposing themselves to unnecessary criticisms. Reserve Bank, however, has not issued any guidelines on the issue of incidence of this tax. Lead Banks have conveyed their views regarding the burden of this tax to the Government and it was believed that the rate of 7 per cent would certainly be lowered, when the Bill imposing a tax on banks' interest incomes would be brought in the Parliament. But their hopes were belied, when the Interest Tax Bill was introduced in the Lok Sabha on 2nd September, 1974 which announced the imposition of the tax at the rate of 7% on the chargeable amount of interest.

There is a likelihood that commercial banks shall have to absorb a part of the seven per cent tax and therefore the banks' lending rates would seriously impair the demand for bank credit and thereby leading to a decline in the demand for bank credit, can clearly be understood in the context of Dividends Ceiling Ordinance of the 6th July, 1974 ; which would leave free resources of Rs. 60 to Rs. 70 crores a year with the corporate sector, thereby lessening its dependence upon the banks for its credit requirements. Bank credit will now serve as a residual source of finance for the companies as they are now compelled to plough back a part of their profits in business.

There is yet another reason for the possible decline in credit demand. In order to reduce their dependence upon bank credit, the companies are now resorting to deposits from the public. Interest rates on company deposits have been greatly enhanced and the companies might increase the same further to explore this new source of finance. Tatas (TISCO and TELCO) and Voltas have increased the one year deposit interest rate to 9% and the interest rates for two, three, four and five year deposits have been increased to 10, 11, 12 and 13 per cent per annum respectively. Baroda Rayon and J. K. Synthetices pay more than 11 per cent interest on one-year deposits. All this points out to the fact that the corporate sector is now striving hard for exploration of resources outside the banking system and the bank credit is rapidly declining. This likely decline in the demand for bank credit, will, therefore, be a main deterrent for the banks to think raising their lending rates any more.

The tax will have both a monetary and a fiscal impact as the objective of the new levy is clearly two-fold—to raise additional revenues and to make credit dearer in the context of inflationary price spiral. But the following analysis will show that the measure will be quite inefficacious on both these counts—revenue realisation and credit restraint.

Regarding supplementing the government revenues, it is contended that this novel tax will reduce the income tax base of the borrowers in the corporate and other sectors of the economy, as interest is an expense to borrowers. One man's income is another man's expenditure. Additional interest earnings to the banks (consequent upon the rise in lending rates due to imposition of this tax) mean increased expenditure of the borrowers and thus the revenue to the exchequer will be reduced. The loss to the government will be to the extent of tax deductibility of interest allowed to borrowers. Stated in other words, the net yield likely to arise from this new measure will be affected by the reduced income tax payable by banks because of the tax deductibility of the new levy. The borrowers will also be paying reduced income tax because of their profits being reduced due to rise in the cost of bank credit. The conclusion to be arrived at is that the net yield from the proposed tax will be much less than Rs. 60 crores a year as envisaged in the Supplementary Budget.

Another objective of the tax is to make credit dearer in order to combat inflation. The traditional outlook of using monetary policy as an anti-inflationary measure has lost its meaning today. The policy of even credit squeeze is not of much relevance in these days of interest hikes, as the industries are not induced any more to build up inventories unnecessarily. The problem of inflation has to be largely tackled on the production and the supply side.

This new taxation measure does not seem to have any anti-inflationary substance or potential rather it will be fanning the inflationary problem all the more. The dear credit policy will cripple investment. Funds usually meant for investment will be attracted to Five Year Deposit with banks as the deposit rates of banks have been raised to the maximum of 10 per cent on such deposits. Long-term savings, instead of being invested in corporate sector and industrial activity, will be deposited with the banks. Banks are not permitted to accept deposits of more than two years in France and other countries. How to mobilise more capital to end industrial stagnation is the need of the hour. Increased investment and production are the only answer to the present inflationary spiral. Upward revision of interest rates consequent on the imposition of 7 percent tax on banks interest earnings will be a disincentive to investment and an inducement to resorting to bank deposits.

WORLD FOOD CONFERENCE

The World Food Conference Secretariat proposes the following two-pronged strategy to counter the world food problem :

With regard to the problem of increasing food production and improving consumption :

1) A substantially increased investment in agricultural development.
2) A major increase in the use of fertilizers, seeds and pesticides.
3) Expanded international, national and regional research programs, emphasizing problems of the small farmer in developing countries.
4) A major program to provide credit, especially to small farmers.
5) A major effort to communicate better farming methods to millions of small farmers.

The key elements of the strategy on world food security include :

1) A large increase in concessionary food aid.
2) An international or coordinated national stocks policy which will protect producers and consumers against undue supply and price fluctuations.
3) An international stocks policy which will provide emergency food security for the developing countries.
4) International trade policies that offer broader and more stable markets, especially for developing countries dependent upon food export earnings.

The Government On Inflation

Pradeep Kumar Mehta*

It is needless to prove that inflation in India have been running at an average rate of 30 per cent per annum for the last two years. In fact, nowadays, it has become a self-evident truth. In the pre-inflation period i.e. up to the second plan and a decade after it. the government did not pay any special attention to the increasing tendency of price level. It assumed that the inflationary trend in India is a normal structural change in the economy. Inflation at a rate of 5 to 7 per cent may be treated as an usual behaviour of a developing economy. But as it crosses this limit, it becomes dangerous and harmful. It is good that now the government has recognised the fact that the country is facing a serious inflationary threat. Within last two years, specially in the month of July 1974, the govern-has taken a number of anti-inflationary measures to curb it. Some of them are :

(i) In mid-1973-74, the government reduced its expenditure by Rs 500 crores and increased the bank rate from 6 per cent to 7 per cent.

(ii, The RBI circulated a number of memorendums to commercial banks for credit squeeze, particularly for non-priority sectors.

(iii) On 6th July 1974, the government issued two Ordinances as a first package of anti-inflationary measures. The first Ordinance lays down that the maximum distributable profit for any company should not be more than 33.33 per cent of its profit or 12 per cent of the face-value of the equity shares, whichever is less. This ceiling will be in force for a period of two years on all companies excluding foreign companies. According to the official calculation, due to the operation of this Ordinance, the corporate sector will be able to save Rs 50 crores per annum

(iv) In the same Ordinance, the interval between two successive announcements of bonus has been increased by 12 months to 36 months.

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(v) The second Ordinance proposes a compulsory deposit of 50 per cent of all additional wages and salaries except normal increments. It will also remain in force for a period of two years.

(vi) A third Ordinance, on 17th July 1974, proposes compulsory deposit for all the income tax payers whose income is Rs 15000 or more. Under this Ordinance, tax-payers whose agricultural and non-agricultural income is within Rs 15001 to Rs. 25000 have to deposit 4 per cent, those whose income is within Rs 25001 to Rs 70,000 6 per cent and the rest will deposit at a rate of 8 per cent of their income. These deposits will carry an interest of 8.5 per cent, i.e. maximum bank deposit rate.

(vii) Recently, RBI increased the bank-rate from 7 per cent to 9 per cent. Following this, SBI also raised its minimum lending rate from 11 per cent to 12.5 per cent. Thus, the new interest rate structure of SBI will range from 12.5 per cent to 14.5 per cent.

(viii) RBI directed the commercial banks to look after their 50 biggest loan-accounts minutely so that no additional credit facility can be availed of by them.

(ix) It was estimated that even after slashing the outlay by Rs 200 crores on plan and non-plan programmes, their will be a deficit of Rs 600 crores on both centre and states' accounts. To overcome this gap to some extent the government presented a second finance bill for the year 1974-75, with an extra tax burden of Rs 232 crores annually. It will collect Rs 132 crores in the remaining part of the current year.

The two Ordinances (i.e. points iii and vi) will collect Rs 550 crores in the first year and Rs 660 crores in the second year. Thus the government wants to exclude about Rs 1200 crores of money supply from circulation in two years. But it is not going to happen. In India for every five rupee worth of flow of national income, one rupee worth of money as stock is required. Hence, in reality, the impounding of Rs 1200 crores will exclude only Rs. 240 crores i.e. Rs 120 crores per annum. Its effect on money supply will be merely one per cent, if at all. As such, it will be an insignificant measure against inflation. Again, in 1974-75 budget, the government proposed an expenditure of Rs 65,000 crores. Thus impounding of Rs 600 crores will show only a marginal effect. The claim of the government that these measures would immobilize the money supply by 5 per cent is a misleading estimate.

The government also tried to attack inflation by issuing an Ordinance for the companies imposing restriction on their distibutable dividends. It will provide to the companies a sum of Rs 50 crores per annum for their development and expansion purposes. Thus their dependence on bank credit and loans by various financial institutions will decrease. But in fact, it will create many new problems for the businessmen. This would lead to a sharp decline in the share prices of a large number of leading scrips. It will also discourage various investment projects in corporate sector due to low returns. This behaviour may further decrease the rate of production and employment.

Increasing thrice the period between two successive bonus announcements will create dissatisfaction among workers and other employees who are required to deposit under any one of the schemes against the rapid price rise.

The deposit under the second Ordinance will be paid an interest at a rate of 11 per cent i.e. 2.5 per cent more than the maximum bank deposit rate. The deposit under third Ordinance will be paid an interest rate of 8.5 per cent. Thus the cost of collection and holding of Rs 1200 crores will be not less than Rs 500 crores on the public exchequer. Since this amount will not be used for increasing the rate of investment or for financing the plan projects, it will be an unproductive extra burden on the government which is trying hard to reduce expenditure. The government is misguiding itself by keeping such a big amount of money idle.

It, is yet to be seen how the government succeeds with the help of all these measures to curb the inflation and keep the prices more or less freezed at the index level of April 1974. For four D. As. have to be paid to the employees in the current year which will cost Rs 900 crores. As a government spokesman said, "if there are no further price increase, a total of Rs 900 crores would become due to be paid as an additional dearness allowance to employees in the government and the private sector over the next one year. Under the Additional Emolument (Compulsory Deposit) Ordinance 50 per cent of this money, i.e. Rs 450 crores, would be impounded and put in a special fund for a period of two years." However Rs 450 crores plus normal increments will enter the market and, thus, will increase the prices.

All these three Ordinances will adversely affect the small savings also. It may be possible that the people of lower and middle classes instead of saving more will withdraw their past deposits to maintain their present standard of living against the galloping inflation, at a rate of 34 per cent annually. Secondly, because either of these measures will be non-effective or, as Mr. Y. B. Chavan said, have had a limited impact on upward pressure on prices. It will also adversely affect the willingness of the people to work hard. Thus, production will decrease and the present wide gap between demand and supply will further increase. It will cause both the cost-push-inflation and the demand-push inflation.

There is a significant correlation between bank deposit and money supply. Bank-credit to business sector is one of the sources of inflationary expansion of money supply in India. The credit facilities to this sector are continuously growing with an increasing speed. The increase in bank rate is a step for credit squeeze, particularly for hoarding, speculation and non-priority sector. However, the increase in bank rate is so small for the present critical situation that it will bound to have only a marginal effect. It will generate only smoke and not the fire which can curb the inflation. Such marginal increase in bank rate will only add to the cost-push inflation.

The supplementary budget, which aims to keep the budgetary deficit at the level of Rs 125 crores, will also encourage inflation. Most of the tax burden is on the industrial sector. Hence the cost of industrial as well as of final product will tend to increase at least by 10 to 20 per cent and make slower the rate of investment. It will also reduce employment opportunities for the nation. This budget will collect additional financial resources but will not help curb the inflation. It will slow down the rate of growth of industrial sector which was only 0.4 per cent in the year 1973-74. Its indirect impact will also be observed on other productive sectors.

However, it should be welcomed that the government is in a mood for making a ruthless use of monetary and fiscal instruments to control and curb the inflationary rise in prices. But unless it adopts a correct strategy involving people its experiments will sure to fizzle out.

(Continued from page 456)

transformation of a developing economy like India and agricultural taxes should be a major source of development finance. But contrary to expectations, as we shall see in this part, agricultural taxes have proved to be a meagre source of resource mobilization in this country and the revenue obtained from these taxes is not elastic. The power to impose taxation on agriculture has been given to State governments in India. Direct taxes on agriculture mainly take the form of

(i) land revenue and betterment levy ;
(ii) cesses on land revenue ;
(iii) surcharges on land revenue ;
(iv) cesses on crops ; and
(v) agricultural income tax.

Of these, land revenue fetches the largest amount of revenue and the next place is occupied by agricultural income tax. Other levies yield negligible amount of income. Land revenue once used to be the largest single source of States revenues but its place was taken by sales tax. Land revenue alone accounted for 33 per cent of the total revenue of all the States in 1938-39, but in later years the share of land revenue in the total has more or less shown a declining trend. This is clear from Table 1.

Table 1

Receipts from Land Revenue

Years	Receipts (Rs. crores)	Share in Total States Revenue (Per cent)
1951-52	48.0	12.12
1955-56	80.3	15.45
1960-61	97.8	9.67
1965-66	104.5	5.80
1968-69	113.9	4.04
1969-70	102.8	3.24
1970-71	112.6	3.20
1971-72 (R.E.)	94.2	2.22
1972-73 (B.E.)	106 3	2.38

Source : R.B.I.

This table shows that the share of land revenue in the total States revenue dropped to 12.12 per cent in 1951-52. During the First Plan period some efforts were made to raise more revenue from land and consequently land revenue showed a slight increase, but still the land revenue could not achieve its old importance. The share of land revenue in the total States revenue rose to 15.45 per cent in 1955-66 due to renewed effort, but it dropped to 9.67 per cent in 1960-61, 5.80 per cent in 1965-66, 3.20 per cent in 1970-71, and 2.22 per cent in 1971-72. There was negligible rise in this share according to 1972-73 budget estimates, but this figure was subject to revision. In this way, the share of land revenue in the total States revenue has witnessed almost a continuous decline after 1956-57 when it had risen to 15.49 per cent. A similar trend is visible in the case of agricultural income tax which is shown in Table 2.

Table 2

Receipts from Agricultural Income Tax

Years	Receipts (Rs. Crores)	Share in Total State Revenue (Per cent)
1951-52	4.3	1.07
1955-56	7.7	1.38
1960-61	9.5	0.94
1965-66	10.7	0.58
1968-69	9.9	0.35
1969-70	I4.0	0,44
1970-71	10.5	0 29
1971-72 (R.E.)	11.8	0.27
1972-73 (B.E.)	13.4	0.30

Source : R.B.I.

So far we have examined the share of land revenue and agricultural income tax in the total revenue of all the States. If we look at these taxes as percentage of total tax revenue of all the States, the result is again not encouraging. This has been shown in Table 3.

Table 3

Land Revenue and Agricultural Income Tax as Percentage of Total Tax Revenue of States

Year	Total Tax Revenue of States* (Rs. Crores)	Land Revenue as Percentage of Total Tax Revenue of States	Agricultural Income Tax as Percentage of Total Tax Revenue of States
1960-61	442.4	21.97	2.14
1968-69	1221.2	9.32	0.81
1969-70	1355.5	7.59	1.03
1970-71	1527.8	7.37	0.68
1971-72 (R.E.)	1684.1	5,59	0.70
1972-73 (B.E.)	1853.2	5.73	0.72

* Excluding Share in Central Taxes. Source : R.B.I,

Land revenue comprised 21.97 per cent of the total tax revenue of States in 1960-61, but this percentage dropped to 9.32 in 1968-69, 7.59 in 1969-70, 7.37 in 1970-71 and 5.59 in 1971-72. There was a negligible revival in this percentage according to 1972-73 budget estimates, but this was also subject to revision. Except for a slight rise in 1969-70, almost a similar trend is visible in agricultural income tax as percentage of the total tax revenue of States. Plan-wise, land revenue and agricultural income tax taken together formed 27.9 per cent of the revenue from States taxes in the First Plan. This percentage dropped to 26 in the Second Plan, to 18.4 in the Third Plan, and further to 6.3 in 1971-72. Thus the fiscal importance of both these taxes has been declining continuously.

Inter-sectoral Inequity

Apart from being an inelastic source of revenue, taxation of agriculture has also generated inter-sectoral inequity in the distribution of tax-burden. It is a common experience that as compared to non-agricultural sector, the agricultural sector is very lightly taxed. In the non-agricultural sector a person pays income tax once his annual income exceeds Rs. 5,000 ; and the marginal rate of taxation rises progressively with the size of the taxable income reaching as high as 97.75 per cent at levels of income exceeding Rs. 2 lakhs. Between 1960-61 and 1970-71, while the proportion of income and corporation tax to national income from sources other than agricultural has risen from 4.1 per cent to 4.6 per cent, the proportion of land revenue and agricultural income tax (two most important taxes paid by the agriculturists) to national income derived from agriculture has declined from 1.63 per cent to 0.85 per cent.

Moreover, in times of rising agricultural prices in India, it is the big farmer who is the major beneficiary, but he has to care little for the payment of taxes. The system of separation of agricultural and non-agricultural income for tax purposes also facilitates tax evasion and helps in converting 'black' money into 'white' money. The agriculture-oriented plan expenditure has benefited most the agriculturists. State governments also provide special facilities to farmers in the form of cheaper credit, price support schemes, warehousing facilities, better seeds, pesticides, irrigation facilities, etc. These benefits accruing to large farmers have not only increased inter-sectoral inequity but have also generated new inequities within the agricultural sector.

As we have seen, agricultural taxation in India has not been able to mob up increasing income derived from the agricultural sector. In 1970-71, the total yield from land revenue and agricultural income tax amounted to Rs. 137 crores, which formed 0.85 per cent of the net domestic product from the agricultural sector. On the other hand, the income tax revenue in the same year was estimated at Rs. 473 crores, which formed 2.60 per cent of the net product of the non-agricultural sector. The relevant data have been presented in Table 4.

Table 4

Years	Yield from Land Revenue and Agricultural Income Tax (Rs. Crores)	Yield from Income tax (Rs. Crores)	Col. (2) as per cent of National Income from Agriculture	Col. (3) as per cent of National Income from Non-Agricultural Sources
(1)	(2)	(3)	(4)	(5)
1960-61	107	169	1.63	2.49
1965-66	130	272	1.37	2.41
1966-67	105	309	0.91	2.44
1967-68	120	326	0.82	2.32
1968-69	136	378	0.98	2.51
1969-70	128	448	0.86	2.71
1970-71	137	473	0.85	2.60

Source: Report of the Committee on Taxation of Agricultural Wealth and Income.

Taxation of agriculture has not become a significant fiscal instrument due to several reasons. Although a large degree of progression has been interwoven in the income tax structure, the principle of progression has not governed the fixation of land revenue at any time and the rate of levy is therefore unrelated to the size of holdings. Some political considerations have also come in the way of effective use of agricultural taxation in the country. The leaders and political parties in the States do not want to displease the majority of the rural population whom they have to face at the polls. Some administrative difficulties have also been experienced with regard to proper assessment and collection of agricultural taxes in the States.

III

Need and Suggestions for Reform

Thus in order to bring about elasticity and inter-sectoral equity there is immediate need for reform in agricultural taxation. In this connection the guiding principle was really set out by the Committee on Taxation of Agricultural Income and wealth in these words: "Of greater relevance is the principle that the incidence of direct taxation should be broadly the same on comparable income and wealth groups irrespective of the sources of such income and the forms in which wealth is held." (CTAWI). Apart from this the principle of progression must govern the fixation of land revenue, agricultural income tax and other allied levies. In India various suggestions have been made from time to time for reform of land taxation.

The Taxation Enquiry Commission suggested the construction of an index number of prices on the basis of the prices of principal agricultural products of a particular region or State in terms of which the revision, of land revenue could be undertaken without administrative complexities and also quite frequently, i.e., at the end of a period of ten years. In order to fix the current and the base period between which price changes were to be measured, the ten years immediately preceding a revision which was about to take place would be considered as current period and ten years preceding the previous revision would be the base. For example, if the standardisation of land revenue is undertaken in 1956, the revision will be due in 1966, and for this revision the base period would be ten years preceding 1955, and the current period would be 1956-65. But before this step is taken, the commission recommended for standardization of the rates of land revenue in the Ryotwari areas and the application of this system in the rest of the country in order to bring about uniformity in the system of land taxation. The method, as suggested by the commission, for the standardization of land revenue in the Ryotwari areas is as follows :—

Table 5

Relevant price period	Average price level (Price in 1873=100)	Increase in existing assessment for arriving at standardized assessment
1880-1899	124	25%
1900-1919	195	12½%
1920-1939	242	6¼%
1940 onwards	697	Nil

Thus if the previous reassessment was made on the basis of prices prevailing between 1880 and 1899, the existing assessment would be increased by 25 per cent. If the previous reassessment was made on the basis of prices prevailing between 1900 and 1919, the assessment would be raised by 12½ per cent and so on.

The recommendations of the commission were capable of solving the short-term problems facing the land revenue assessment in the Ryotwari areas, but they lacked long term perspective. The commission did not hit at the basic defect of the system of land tenure in our country manifesting itself in small sizes of uneconomic holdings, although its suggestion for the scheme of revision of land revenue in the context of significant changes of price level was commendable. "The appropriate role assigned to land taxation in a developing economy is that of ploughing back the expanding productivity in agriculture into resources needed for industrialization and land taxation will continue to fail to perform this role in India so long as the system of land taxation and the agricultural economy of the country exist in their present form."

Dr. I. M. D. Little has supported the case for progressive taxation of land. According to his scheme holdings below 5 acres are to be exempted from the payment of land revenue and the total land holdings are to be divided into 26 classes, the size of holdings ranging from zero to 30 acres and above. The rates of land revenue for the size of holdings between 6 acres and 30 acres and above vary from Re. 1 to Rs. 15 per acre. Dr. Little expected a receipt of Rs. 240 crores or so on the basis of his scheme. Although Dr. Little's scheme is based on a system of elaborate progression, it is a complicated, impracticable and burdensome one because the maximum rate of tax on a holding of the size of 30 acres is reached very soon which may impair incentives. Moreover, Dr. Little has not suggested any scheme of revision of land revenue which may be termed as the fundamental defect of his scheme.

Raj Committee's scheme is based on a simple system of land taxation. It suggested the doubling of land tax on holdings of above 5 acres ; the imposition of a tax on agricultural rent fixed at one-tenth of the gross produce of the tenants, the incidence of which falls on rent-receivers ; and a surcharge on holdings over 5 acres used for commercial crops with adjustment for different kinds of commercial crops. The last suggestion appears to be too cumbersome and it may also discourage the production of commercial crops which are proposed to be highly taxed. Again, the scheme does not provide any relief to the subsistence farmer and it is liable to encourage evasion of tax on agricultural rent.

Dr. A. M. Khusro has also supported a system of progressive taxation of land for mobilizing more resources and to bring about inter-sectoral and intra-sectoral equity. For taxation of land he has suggested rates of Rs. 3 per acre on holdings up to 5 acres, Rs. 5 per acre on holdings between 5 and 10 acres, and Rs. 10 per acre on holdings above 10 acres. Dr. Khusro estimated an yield of Rs. 312 crores on the basis of his scheme. Although it is simple to implement, his scheme does not provide any tax relief for uneconomic holdings and the subsistence farmers. Moreover, the scheme is not very progressive and the maximum rate of Rs. 10 is reached too soon on the holdings above 10 acres.

Dr. R. N. Tripathy wants to exclude uneconomic holdings from the perview of tax and has suggested to exempt holdings below 5 acres from payment of land revenue. The loss resulting from this exemption would be less than Rs. 23 crores which can be made up by taxing larger holdings at higher and progressive rates. For taxation of land Dr. Tripathy has suggested rates of Rs. 3 per acre on holdings between 5 and 10 acres, Rs. 5 per acre on holdings between 10 and 30 acres, Rs. 10 per acre on holdings between 30 and 50 acres and Rs. 15 per acre on holdings above 50 acres. He has estimated a revenue of about Rs. 220 crores resulting from the implementation of this scheme. Following Kaldor, Dr. Tripathy has pointed out that the structure of land taxation may be suitably modified in the light of an assessment of the potential productivity of each holding made on the basis of some criterion such as average rainfall for that area and availability of irrigation facilities. But Dr. Tripathy has not given us the modified structure of land texation emerging on the basis of the above criterion. The structure would be really complicated and difficult to work out. He has not also suggested revision of land revenue in years to come. In order that agricultural sector may contribute more resources for development financing, Dr. Tripathy has suggested stabilization of agricultural prices by nationalising the wholesale trade in foodgrains. But experience shows that this prescription has failed to produce desirable effects. However, Dr. Tripathy's scheme merits attention in so far as his system of land revenue would be elastic, equitable and capable of bringing about land reform because higher rate of tax on larger holdings based on an assessment of potential productivity would encourage better and more equitable distribution of the ownership of land in the rural areas. But the rate-structure of land taxation suggested by

Dr. Tripathy appears to be mildly progressive in view of the gains which have accrued to large cultivators in recent years.

Raj Committee Report

The Government of India appointed a Committee on Taxation of Agricultural Wealth and Income on February 24, 1972 with Dr. K. N. Raj as its chairman to examine the question of taxation of agricultural wealth and income. It submitted its Report on October 31, 1972. The main recommendations of the committee are as follows :—

(1) The present system of land revenue should be replaced by Agricultural Holdings Tax (AHT). The actual tax liability under the AHT is to be arrived at by applying a simple formula to the rateable value of the holdings minus the development allowance ; if the rateable value of a holding (minus the developing allowance) is 'X' thousand rupees the AHT should form x/2 per cent of this amount, For example, if the rateable value of a holding is Rs. 2500, the development allowance to be deducted will be 20 per cent of Rs. 2500, i.e., Rs. 500. Thus the amount of rateable value minus development allowance will be Rs. 2000. The AHT should constitute 2.0/2 or 1.0 per cent of this amount i.e. Rs. 20.

(2) There should be an integrated taxation of agricultural property through wealth-tax and of capital gains on agricultural assets through income-tax.

(3) There should be partial integration of income derived from agriculture with non-agricultural income for tax purposes.

(4) For tax purposes, incomes of husband and wife should be clubbed, and the family should form the tax unit.

(5) On agricultural as well as non-agricultural incomes and wealth the incidence of taxation should be the same.

(6) The Hindu Undivided Family should no longer be treated as tax entity.

(7) In order to acquire land and to promote development projects each state should have a Land Commission.

(8) Irrigation water should be priced to cover costs without element of subsidy.

It would immediately appear that these recommendations of the Raj Committee are indeed very sound and far-reaching and they are capable of bringing about inter-sectoral and intra-sectoral equity and of collecting more revenue for States. We have examined above the suggestion made by various bodies for the reform of land taxation in our country, but nobody has given suggestions which are as comprehensive and free from defects as those given by the Raj Committee. They also possess the merits of suggestions previously given by various bodies. The suggestions of the Raj Committee can be worked within the present provisions of the Constitution. They are equitable and based on a desirable degree of progression. Moreover, the system of taxation, as suggsted, (i) takes account of the difference in productivity of land depending upon the particular crops grown in a region ; (ii) has a uniform incidence in different parts of the country ; and (iii) reflects changes in productivity and prices over a period of time. It is also expected that on the whole the effect of the AHT upon savings and capital formation should be favourable. (A. Banerjee). For tax purposes the integration of income and a system of integrated taxation of agricultural property through wealth tax and of capital gains on agricultural assets through income tax are suggestions which even a commonman will welcome on the ground of justice and in the interest of reducing economic disparities. Thus the Raj Committee Report presents a scientific basis on which the present system of land revenue and agricultural income tax may be designed.

However, the system of AHT has been criticised on the grounds that (i) it is not simple and intelligible to the average farmer and will create administrative difficulties for officials ; (ii) it will lead to tax-evasion because it will have the effect of neither helping the small-holders to keep accounts nor preventing the more prosperous farmer from 'cooking his books' ; (iii) the AHT will not succeed in its objective categorically stated in its terms of references "to promote more efficient utilisation of the available resources of land and labour" ; (iv) the AHT may change the income-leisure preference at a size of holding of 30 acres or more, but since ownership and operation go together, it may not have much income effect, (v) it will not be much effective in checking consumption ; and (vi) it will not have much revenue elasticity. The Raj Committee has expected an yield of Rs. 200 crores from AHT but it has not taken into account the increased cost of collections. The report itself has expected that the revenue from the tax will tend to fall as it enforces the splitting up of larger holdings into an optimum size of about 20 acres. Thus, on balance, A. Banerjee has concluded that "the A.H.T. is suitable for only a very small area of this country and to the extent the economy becomes more and more urbanised or monetised it will become progressively less so." According to her the AHT would work in some States but not in other States in the customary methods of production where, consumption and social relatione are predominant. She has, therefore. suggested that for more tax resources, the preasent land revenue system should be implemented by an ordinary agricultural income tax.

But in arriving at the above conclusion almost half-truth has been ignored. In fact, land reforms—the promotion of more efficient utilisation of the available resources of land and labour, the change in income-leisure proference, a check on consumption, etc.—are all matters which are functions not of agricultural taxation alone, but they also depend on other fiscal and non-fiscal measures. To expect that the AHT should perform all the functions and that also very perfectly will really be expecting too much from it. Even then the implication of this tax of splitting up of larger holdings into an optimum size of about 20 acres will in itself be a great achievement and a fine piece of land reform urgently needed in this country. From the point of view of revenue elasticity, although the larger holdings are to be reduced into an optimum size of about 20 acres, with the increase in output, rise in the prices of crops and decrease in cost of collections following better and efficient adminstration in years to come, we can expect a rise in revenue from this tax and an effective system of AHT may be evolved. It has been admitted that "while in the short run the prospect seems bleak, it is considerably better in the long run". The problems of tax-evasion and complexity of the system may be tackled with patience and effort. In fact, no other tax is immuned from these defects. The AHT may prove to be a good learning instrument for transition to a proper income-tax. To conclude that the AHT may be introduced in those States only in which the customary methods of production, consumption, and social relations are predominant, is really to minimize difficult and the complex administrative problems present in those States as campared to others. As a matter of fact, the introduction of a new tax may present certain problems in backward as well as advanced States, but one should not fight shy of those problems. We can say that the system of agricultural taxation as suggested by the Raj Committee needs a fair trial and introduction in all the States of India.

(Continued from page 424)

The net outcome of strong inflationary pressures has been a certain lowering of sights (from a growth rate of 6.2 per cent per annum postulated for the Fifth Plan in the Fourth Plan to that of 5.5 per cent per annum as finally postulated in the Draft Fifth Plan). So far, we have limited our attention to the inflation-breeding or inducing forces. It is time that we took stock of the inflation-moderating or dampening ones such as follows :

1. In many projects unused resources were drawn upon without raising their market prices.
2. In certain sectors, such as agriculture and hand industries, an increase in production was realised quickly with comparatively small investments.
3. Some investments made before added to the current output.
4. With improvement in the level of organisation, efficiency and technology, relatively large increases in output were obtained without a proportionate increase in investment in certain fields.

Let us now indicate the various steps taken in the plans to correct or moderate undesirable price trends. To a degree, fiscal and monetary measures have helped the process of development to be carried out in a non-inflationary manner. Monetary policy has regulated the pace of credit creation through banks. Credit control has exercised a wholesome restraining influence on speculation and assisted in attaining some balance between aggregate demand and aggregate supply. It has regulated investment and business activity, though not quite effectively. A closer hermonisation between fiscal and monetary policies has been lacking. The crying need of the hour is the control of money stock as well as income flows. The excessive rise in the stock of money ceused by the fiscal operations of the Government must be neutralised by corresponding changes in the level of bank credit extended to the private sector. The flow of income must be manipulated by means of a discriminating but prompt use of tax and other devices (the impounding of further increases in dearness allowance, of dividends beyond a specified level are some of the recent innovations). A public borrowing programme must aim at mobilising savings more effectively.

Insofar as fiscal and monetary disciplines have not sufficed to contain inflation, physical allocations and direct controls in certain sectors have been adopted. Long ago the authors of the Second Plan had written, "No amount of prudence in financial management can by itself eliminate completely the risk of inflation in an economy attempting to develop rapidly". They had therefore advised that physical allocations and direct controls must be adopted, as and when necessary.

The basic objective in respect of foodgrains has been to build up an effective public distribution system as a sort of countervailing power. Its rationale has derived from the necessity of discouraging speculative activities. In trade the leading sensitive areas are the allocation of scarce imported cammodities, the wholesale trade in agricultural commodities and the distributive system in relation to the mass consumption goods. During the years of planning the public sector has striven to take charge more and more of the commanding heights with a view to evening out the supplies of foodgrains and stabilising their prices through buffer stocks and other operations. What has been sought to be ensured is the stability of the price level of essentials—the criterion of 'essentiality' being the significance of a particular commodity or group of commodities in the consumption of the mass of people. That is to say, from the wider point of view of controlling prices and profitability, and gaining control over the economy at strategic points, state trading at the wholesale level has employed as a potent tool of planning. By means of it the Government has operated directly at the cost of living of the mass of people, which is determined overwhelmingly by the supplies and prices of foodgrains, cloth, sugar, salt and kerosene oil. Corrective action has been taken with respect to large seasonal fluctuations and regional disparities of prices as well by hindering speculative hoarding and by judicious sales and purchases by the Government. Command, even reserve stocks, of the essential goods has acted as a safeguard against the adverse consequences of deficit financing and as an insurance against the risk of inflation. By way of suggestion we can say that greater attention ought to be paid to the difficulties of feeding the public distribution system in lean years and the demand and supply conditions of the different commodities must be very carefully examined while fixing their prices and quotas to the States so that chances of leakages are minimised. The administrative machinery must function efficiently and honestly. It is depressing to note that contary to the advice tendered by the framers of the Fourth Plan to promote the growth of the co-operative distributive system the fair price shops continue rather increasingly to be connected with the distribution of essential goods. Another method to fight inflation suggested first in the Third Five-Year Plan was restraining the consumption of non-essential goods and services and avoiding the utilisation of the limited resources in the production thereof. But not much was attempted in this direction. Again. in the Draft Fifth Plan there is the suggestion that investment in the production of non-essential consumption goods should be pruned through the proper licensing of capital goods and raw materials supplemented by a system of excise duties. This is expected to help in intercepting the profits that ensue the producers and the middlemen and thereby raising resources for the public exchequer as well as to lead to the saving of scarce intermediates.

However, experience of the past avers that physical controls, especially of the essential and staple consumer goods, are not an instrument that can be trusted to function effectively or equitably for any great duration of time. Further, they cannot work unless they form a fairly integrated system. Nor can they function with full force in the absence of psychological preparedness on the part of the people. For this the requisite climate of opinion and understanding has to be fostered. Also, it is to be admitted that whilst controls may be administratively cumbersome and act as disincentives, lack of them may engender inequalities and hardships to the prejudice especially of classes that need protection most, as the Second Plan pointed out boldly. "The problem, then," said the Third Plan, "is one of drawing the right line between too much intervention and too little, and of devising appropriate techniques of controls and regulation at certain vital points in the system." The ideal remedy for a situation of scarcity or shortage is an increase in supplies, to realise which suitable measures should be taken expeditiously. As the First Plan put it, increase in output through fuller utilisation of capacity, through improvement in technical and managerial efficiency, through harder and more sustained work all round is the basic answer to the inflationary pressures, for this would be a far better means of bringing supply and demand into equilibrium than some of the other methods which, while doing good, have also a somewhat depressing effect on the economy. But since in the short run, there are severe limits to an expansion in output that can be secured, there is a strong case for deploying other devices side by side.

But balances and safeguards notwithstanding, the possibilities of significant and even disturbing price rises cannot be wholly eliminated. And why ? Because there is the familiar factor of uncertainty in regard to the monsoon. A five per cent shortfall in agricultural output in a single year can reduce the marketable surpluses enormously and push up prices more than proportionally. Next, the various curbs on consumption implicit in the plan may not always operate to the full extent so much so that a state of excess demands may well last over a part of the plan period. Last but not the least, even as a plan envisages a certain balance between the rates of growth in the various sectors, some imbalance is almost bound to stem from time to time. Investments and outputs in diverse directions cannot, in actual practice. be phased out with precision. Lags may crop up at various stages. Apart from these, there is another limitation The level and the structure of prices are related to a number of fundamental economic decisions, some of which are taken by our Government, others by the governments of other countries, and yet others rest with the individual economic atoms—the consumers, the producers, the savers, the investors,—who are widely scattered and act in terms of the prospects of economic benefits to themselves. A plan tries, no doubt, to collate these related decisions and harmonise them into a common focus but there are grave checks upon the capability of a short-term plan like a five-year plan to alter the structure and the level of prices in keeping with its norms. To conclude, therefore, the best defence against inflation is, in effect, steering the economy clear of it, but a policy of "playing safe" is not always conducive to development. A measure of risk has to be taken, and taken all the more because a developmental plan cannot be abandoned or scaled down at the first appearance of difficulties or bottlenecks.

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An Uncommon Movement

Bihar, India's one of the most potential but backward States, has seen an uncommon type of movement under the commandment of a less known in recent generations and much advanced in life leader, Jayaprakash Narayan. He has risen the demand that the Bihar Legislative Assembly must be dissolved. For it is headed by a corrupt ministry and the people do not want it. Democratic logic will say that the JP's movement should wait for the next general election to see the electors' say. This is what the Prime Minister, i.e. the Congress, means to say. J.P., relentless as he is, expresses further that the Bihar-type movement will enter into the other States eventually to encircle the Parliament with the demand that the Parliament must be dissolved here and now as the people do not want its going. Call it the Mao's gherao strategy, no harm or quarrel in it.

To a democrat JP's demand is undemocratic and inviting violence to involve the Government in violence. This may be all true. But JP's contention is what else is there to remove the corrupt and inefficient Government. Force is not desirable but it is a must on an occasion like this and this has been prescribed even by many pacifists, Mahatma Gandhi including. World history has alway favoured it.

The point is not there. The point is who provide the strength of JP. Save CPI (the Moscow-brand communist party) all other important political parties, both the nationalists ("right-reactionary", as they are called by the communists and a section of the Congress) and the "leftists" ("communists" or "extremists") have joined actively or spiritually in the JP's movement. This may be an added strength but not the key of the strength. For having failed in all possible alternative experiments to capture power these political parties have been forced under pains of withering away to rally round JP whose political colour is a non-descript. Then, what is his strength that makes the all-powerful Prime Minister of India take cognisance of it and send thousands of her best volunteers supported by "lakhs" of her ally CPI's to confront and contain "a few" volunteers of JP ?

JP's strength is decidedly the "people". The people want change. Mrs Indira Gandhi has failed to deliver "socialism" to them. Her efforts have been to radicalize administration with Moscow-oriented cadres to build up a gigantic and an expanding public sector as the "end test" of socialism, which was once both methodologically and ideologically visioned by her father. The reality says that they have, from the very start, courted a catastrophic failure. Twentyseven years of waiting has made the people feel that only death can give them life and happiness. But before that a desperation comes to everybody to take revenge of one's deprivation of the worldly pleasure. As Castro, very much known to Mrs Gandhi in recent days, said once, "To the people whose desperate roads through life have been paved with the brick of betrayals and false promises, we were not going to say : we will eventually give you what you need, but rather—here you have it, fight for it with all your might so that liberty and happiness may be yours !" This mood of the people has been reflected in JP's movement and his clarion call to the people is identically that of Fidel Castro's who had roared up against the Dictator Batista. JP's movement is bound to assert itself all over the country ; although at this moment it may not explode with enough force and vengeance capable of bringing in a radical change in our social order. But the ruling party should not pose the question, "why", rather it should address itself, "why not the people should revolt for a change." For what do the people find around ? Smugglers, black marketeers, corruption at high places, princely living for a few, rule of money, "justice" to privileged, power to coterie, inefficient and indulgent "public sector socialism," and greater assertions of the private sector. What do they get for them ? Unending unemployment, unending price rise, starvation, uncertain future leading to the path of servility, oppression, and death. These are not exaggerations. They are facts admitted, in this or that way, by the Government and the party running it. Their attempts to moderate the mood of the people by holding the international politics and finance responsible for the misery of the people may have a meaning to them but not to the people whose practical experience is that those why say like this are themselves living in a kingly style. The "crisis" is neither national nor transitory. It is for the people only and a phase of the deep process of raising a social order based on exploitation of masses. Had it been a national crisis the whole country (barring the communists perhaps) would have stood by the side of the ruling party as it did more than once when the country had seen the Chinese and Pakistani aggressions, as Mrs Gandhi has herself candidly confessed.

The point is not whether the people are right or wrong to lay their trust in JP. The point is where JP will lead them and the country. "Events will create the next stage"—as JP seems to hold is neither inspiring nor scientific. He seems suffer from the lack of a clear vision of his aims and deeds. This may be quite likely. For the movement is truly a people's movement, sparked off almost instantly by a modest call of JP, who himself might have been overwhelmed and surprised by the lesson that the people had been in such a fighting mood for the preservation of their life, honour and happiness; for freeing their motherland from foreign ideological domination and making her great and a guide for the rest of the world.

This is the glorious moment for the country. The people's enthusiasm must be utilized for creating a new India. JP, as he stands now, is not the answer to this exerting enthusiasm. There should be immediately a "National Government" headed by JP himself and consisting of the representatives of all-India parties, no matter if any of these parties has a foreign alliance. If it works well for the happiness of the people and making India great; good. If it fails, a new political realignment will emerge out of the failure. This is very much needed for the people to understand which party is the friend and which one is the enemy of the country. Our country is not destined to be poor, it has vast potentiality. It is poor because there are some true "counter-revolutionaries" working to sabotage constantly what are good for the country and the people. The people should know and get rid of them once-for-all. The progress will then logically follow.

India's farm productivity is still far below that of most countries. If the Indian farmer grew his rice, etc. as efficiently as farmers in Japan, Italy or Egypt, the whole world would be flooded with surplus grain.

Agricultural yields in tons per hectare

	India		Maxima obtained in other countries
	1961-65	1969-75	
Rice (unmilled)	1.48	1.67	5.5
Wheat	·84	1.23	2.4
Maize	.99	1.15	5

—Colin Clark

HAPPY ANNOUNCEMENT

ECONOMIC AFFAIRS

20th YEAR OF PUBLICATION in 1975

On the eve of this it expresses its deep sense of gratitude to all its well-wishers and patrons.

Some Aspects of Industrial Recession in West Bengal During the Sixties

Asok Kumar Ghosh*

I

In this section we shall consider the nature and extent of the recession in terms of certain general economic indicators. The annual rate of economic growth in West Bengal fell from an average of 3.8% during 1960-61 to 1965-66 to 2.7% over 1965-66 to 1969-70. In contrast, the annual rate of growth of national income for India as a whole increased from 2.5% to 4.6% over the same period.

Table 1

Annual Rate of Growth of Income in West Bengal and India (at 1960-61 prices)

Years	West Bengal	India
1960-61 to 1965-66	3·8%	2.5%
1965-66 to 1969-70	2.7%	4.6%

Source . Economic Review, West Bengal, 1972-73

West Bengal's share in India's net national output (at 1960-61 prices) fell from 8.2% in 1965-66 to 8.07% in 1966-67 and rose slightly to 8.1% it 1969-70.

Table 2

West Bengal's Share in India's net National Output (at 1960-61 prices)

Net output (In cr. of Rs.)	1961-6	1964-65	1965-66	1966-67	1968-69 (P)	1969-70
India	14037	16219	15441	15707	17057	17955
West Bengal	1093	1313	1278	1268	1409	1464
West Bengal's Share (%)	7.6	8.0	8.2	8.07	8.2	8.1

Source : Economic Review, West Bengal.

The volume of exports and imports constitutes another index of estimating the level of economic activities in the region concerned. The share of Calcutta custom zone in India's total exports (merchandise) has been declining gradually ever since 1951-52. The percentage share of Calcutta Zone's imports to the total imports of the country also shows a similar downward trend. Of course, the rate of decline was accentuated during 1966-67—1970-71. Thus, over the five years from 1961-62 to 1965-66, Calcutta's share in total exports decreased by about 6% as against 16% over 1966-67 to 1970-71. Likewise, Calcutta Zone's contribution to the total engineering exports of India declined from 66% in 1965-66 to 49% in 1966-67 and 29% in 1967-68. After recovering to 42% in 1968-69, it fell again to 25% in 1969-70.

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Table 3

Calcutta Custom Zone's Share (%) to Total Exports and Imports of India (Merchandise)

	(A)		(B)	
Years	Total Exports	Total Imports	Engineering Exports Calcutta	 Bombay
1961-62	47.1	35.6		
1964-65	43.4	32.1		
1965-66	41.8	27.4	66	23
1966-67	42.2	25.6	49	27
1967-68	42.1	22.8	29	46
1968-69	34.2	24.1	42	34
1969-70	33.0	18.4	25	43

Sources : (1) Handbook of Statistics—Engineering Asson. of India, 1972-73.
(2) Industrial Resurrection of West Bengal—1972.
(3) Unpublished data from C.S.O.

Although the ex-factory value of industrial output in West Bengal recorded an increase over 1963-68, the share of West Bengal in the ex-factory value of industrial output in India as a whole, declined from 23.1% in 1963 to 21.5% in 1964, 19.7% in 1965, 20% in 1966, 18.4% in 1967 and 16.4% in 1968.

A downward trend is also revealed if we consider the general index of industrial production. In the case of India as a whole, the general index of industrial production (with 1963=100) moved up from 118.6 in 1965 to 133.0 in 1969. But in West Bengal it came down from 112.8 in 1965 to 104.8 in 1966, 103.1 in 1967, 104.3 in 1968 and 99.3 in 1969.

West Bengal's share in total productive capital of all Census Sector Industries was reduced from 21.35% in 1963 to 19.65% in 1964, 19.4% in 1965, 18.3% in 1966, 17.5% in 1967 and 14.81% in 1969.

(Continued on page 525)

Milk Supply In Calcutta—A Few Constraints

Samar Kanti Bose,* S. B. Chatterjee**
S. K. Pain***

The growth of dairy industry in a more or less organised manner is of recent development in our country. In spite of high cattle population the per capita availability of milk so far estimated is about 112 grams only, which is much below the nutritional individual requirement. India has 20 per cent of the world cattle population and 50 per cent of the total world population of buffaloes but her livestock production forms a small fraction of the aggregate world output. Of the 22.68 crores cattle, 75 p.c. are non-descript and uneconomic and their productivity is hardly 10 p.c. of the desired level. Hence to meet the requirement of the people there is an urgent need for boosting up the milk production through various measures from the present level of 22 million tonnes per annum.

Briefly, the measures are by (i) improvement of breeding stock ; (ii) provision of feed and fodder ; (iii) scientific marketing arrangement ; (iv) economic prices for fluid milk and for the milk products, and (v) controlling of milk product trade as and when necessary. Any improvement in the milk production and supply can only be brought about by an aggressive programmes for improving the productivity of our cattle in the rural area through cross breeding programme of exotic breeds.

The problems of milk supply in Greater Calcutta are multidimensional. Most of the problems are related to the problems mentioned above. During the last few years the Government has faced enormous criticism for failure in this sector. In this discourse we will try to deal with different facets of problems and also with the main economic set-backs which detracted its success. Milk Scheme has faced enormous problems in its execution in recent years which are primarily concerned with non-availability of fluid surplus unlike Punjab und Gujrat.

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The quinquennial census conducted in the State of West Bengal gives the following production figures for 1951 and 1956. For the years 1961, 1966 and 1971 the livestock census did not estimate the milk production. The Government has tried therefore to work out the figures of production for these three years for a comparative study of trends. It may be seen that the milk production in the State did not change substantially during 1951-71, especially in 1961 to 1971. This stagnancy in the overall production of milk in West Bengal has thrown the people into a helpless condition.

The table below will give an idea about the position :—

Estimated production of milk in West Bengal (lakh kg.)[1]

Year	Cow Milk	Buff. Milk	Total Milk
1951	11.1	1.8	12.9
1956	11.7	2.0	13.7
1961	12.9	3.8	16.7
1966	13.9	3.8	17.7
1971	13.8	3.9	17.7

Demand and Supply of Milk

Milk production in West Bengal has not increased to a considerable extent during the last two decades. In this perspective if a study is made in the demand and supply of milk, it can easily be understood that the demand has always exceeded the supply. The State is having only an intake of .86 grams of milk per capita per day, whereas the same is 324 grams in Punjab and 163 grams in Gujrat. The Government has tried to estimate the demand and production of milk from time to time and found that no proper balance has been maintained between production and demand in the State. The table below has been incorporated from one of the earlier publications of Milk Commissioner, West Bengal.

The Government of West Bengal has estimated the demand of milk per day for West Bengal, Calcutta, and Greater Calcutta. The estimate says that the economic demand (1974) of milk is approximately 80.17, 5.72 and 12.81 lakh litres for West Bengal, Calcutta and

Greater Calcutta respectively. By Calcutta we mean the area under the municipal jurisdiction i.e., 100 wards of Calcutta Municipal Corporation and for Greater Calcutta we have taken the areas under Calcutta Metropolitan Districts i.e., 720 square K.M. under which 34 adjoining Municipalities are functioning. The former area having a population of 31.81 lakhs and the latter 70.40 lakhs as per 1971 population census. With the increase of population in these areas during the period of 1960-61/1970-71/1973-74 demand of milk has also increased substantialy.

Demand of milk per day (lakh kg.)

Year	West Bengal	Calcutta	Greater Calcutta (C.M.D.)
1971	74.44	5.28	11.83
1972	76.30	5.42	12.15
1973	78.21	5.57	12.47
1974	80.17	5.72	12.81

Flow of Milk

The population of Calcutta is 31.81 lakhs as per 1971 census. Milk Supply in the city is not organised in the manner as it is n the western countries. In addition to the Greater Calcutta Milk Supply Scheme, 4 to 5 organised dairies in the private sectors are also engaged in production and sale of fluid milk to the citizens. The liquid produced in the neighbouring rural areas is also collected to a greater extent by the private milk traders for the city in its fluid form and in the shape of chhana, and khoa for consumption in sweetmeat shops.

In an the estimate, the Milk Commissioner, West Bengal, has shown that the supply of milk in Calcutta can be categorised into four heads, e.g., (1) There are 2395 commercial khatals producing milk in the Calcutta Municipal area ; (2) 613 milk depots of Greater Calcutta Milk Supply Scheme are selling milk everyday. Most of the depots supply milk in the morning and some in the afternoon ; (3) The milk brought to the city of Calcutta through roads and rail on private initiatives by the traders. (4) The other privately organised dairies selling milk in Calcutta.

The supply of fluid milk in Calcutta is approximately 4.58 lakhs litres per day, out of which Greater Calcultta Milk Supply Scheme handles 1.8 lakhs litres, i.e., 39% of total supply. The number of khatals in 1960 were 6271 which has fallen by 38% i.e., to 2395.

The shortage of milk supply can be attributed to the interaction of three main factors such as high profitability in the sweetmeat trade, increase of demand of milk and stagnancy in the production. In Calcutta more than 4000 sweetmeat shops which are licensed under the Government, consume milk in its fluid form and in the shape of Chhana for daily pruduction of sweets, e.g., Sandesh, Rasagolla, etc. Specially, on religious and marriage days, sweetmeats are in great demand and sold at high prices. As a result the price of fiuid milk sometime rises up to Rs. 4/- or more per litre.

Surplus Milk

The basic idea behind the development of dairies in urban centres is to promote animal husbandry profession in the rural areas so that our agricultural labour gets full time occupation throughout the year. Surplus labour in the rural areas has remaind one of the greatest problems in the Indian economy. To absorb this surplus labour in the subsidiary occupations in the villages, without removing it from its usual profession (cultivation), the planners have thought of giving dairy development programme a push through Five-Year Plans.

Until recently, dairying as a commercial venture in the villages was unknown. Cow keeping is an way of life to our agricultural labour. The surplus milk produced in the household is consumed mostly by the family members. In the suburban and urban areas a slight change has been observed recently, especially, in the case of the latter, where 98% milk produced in the commercial khatals are marketed whereas 65% of the milk produced in the suburban areas are available as surplus only.

Rural surplus milk has been the source of raw material to organised dairies. Surplus milk is collected by Government from rural areas through 20 Chilling Plants under its control. These Chilling Plants are mostly located in the districts of 24 Parganas, Nadia, Hooghly, Murshidabad, Burdwan and Bankura and are providing market facilities to the farmers of rural areas by offering remunerative prices for their products. Milk collected through these Chilling Plants is processed and bottled at Government dairies and is distributed in the city through 613 milk depots and to hospitals and institutions at a price much lower than in the free market.

From the table below we can have a picture of daily milk collection by the Government from the districts which will say how and to what extent the surplus milk got an outlet to the urban markets.

Average daily procurement of milk from the nearby districts of Calcutta

District	1967-68 in kg.	1968-69 in kg.	1972-73 in kg.
24-Pargrnas	5465	4909	3260
Nadia	18719	19884	10428
Murshidabad	6092	6025	5548
Hooghly	2873	2165	173
Burdwan	307	261	38
Calcutta	8995	6706	2217
Total Dist.	42451	39950	21764

Source : Obtained from Directorate of Dairy Development, Economic & Statistics Section.

Collection of Marketable Surplus

West Bengal is considered a deficit area in regard to milk production. Humid and temperate climatic condition, shortage of feed and fodder and absence of good quality breed animals are fundamental factors for this deficiency. Although this region has got a good market for milk and milk products because of its heavy concentration of the people in this area, the productions from indigenous cows and buffaloes are appallingly low. The area can therefore be termed as demand zone whereas Punjab, Hariyana and Gujrat comprise production zone. The low productivity of the animals kept the aggregate production in the area lower. The producer farmers have a very low marketable surplus. In most of the cases the produce is consumed by the family members.

Besides the quantity cannot reach the market in liquid form because of the transportation in bottle milk, specially in rainy season i.e., from July to September when the remote places are flooded with water and village roads are in worst condition. Due to lamentable neglect of transport and procurement facilities and low price of milk paid to the milk producers and breakthrough in crop production technology, the dairy farming has become less lucrative, unprofitable and a part-time job for farmers. As about 75 per cent of the milk is consumed by the producers themselves, the marketability is limited and scope of further capital investment is weak. The absence of economic price for the products is one of the important factors.

Because of its perishable nature the fluid often changes its shape to chhana and other forms of production, e.g., khoa, ghee, dahi, and finds its market to distant places. The competition arising out of sweetmeat production is insurmountable and chhana often enters into seller's market.

Marketable surplus, whatever its quality, as available in the rural areas can be arrested if the following provisions are made keeping in view the economic aspects of the trade :—

(1) Arranging decentralised collection facilities in remote rural areas.

(2) Scientific price policy for both cow and buffalo milks revisable time to time on the basis of cost of milk productions and seasonal fluctuation in production.

(3) By providing extension facilities to producer suppliers in the shape of loans for purchase of better quality animals, supply of feed and fodder at controlled price, veterinary services to animals and other innovational techniques.

(4) Banning the production of chhana and khoa in the potential areas and taking localised action (imposing control on chhana trade).

(5) Adoptation of publicity measures through press and films discouraging consumption of sweets.

It is often suggested that by copying the measures adopted in the Kaira District Co-op. Union at Anand, Gujrat, i.e., by adopting the co-operative method of production and extension work, the picture can be made different. Milk co-operative can lead to a more brighter future if developed on "Amul" pattern. Formation of milk co-operatives in an extensive way in the potential districts of West Bengal can be advocated in this connection.

There is a bright scope for co-operative dairy farming in such areas specially for the small farmers as 90 per cent of these farmers are badly in need of increasing their income. The potentialities of co-operative farming must be mobilised for modernising the dairy farming by breeding with exotic breeds, replacing the less profitable animals, feeding improved varieties of fodder and by provision of marketing facilities.

An estimate (1965-66) made by Dr. S. C. Roy in the year 1966 says that approximately 1,40,000 kgs. of cow milk produced in the recognised pockets in the district of Nadia, 24-Parganas, Howrah, Hooghly, Burdwan and Bankura are used daily for conversion into chhana required in the preparation of sweetmeats sold in the city of

Greater Calcutta. The general view is this unless any check on this increasing consumption habits of sweets in the city is made by either enforcing law or by public themselves, the fluid milk trade will be at stake. The lure of high prices of chhana will automatically convert the fluid milk produced in these areas.

The countries like U.K., U.S.A., New Zealand, Holland and Denmark where dairying has made progress, statutory binding has been imposed for maximum utilisation of milk produced in fluid consumption and then only the surplus is allowed to be converted into other products, e.g., cheese and butter. In West Bengal where demand exceeds supply no such controlled measures were taken effectively, although there is a Milk Trade Control Order (1965).

Feed and Fodder

In recent days there have been talks of feed and fodder crises in the State extensively. Our agricultural planner has never tried to estimate the requirement of feed and fodder for the growing livestock population in India. This is considered as one of the greatest weaknesses. India has 22.68 crores of cattle population and this vast army of farm animal has to be fed and reared properly for service. For want of proper nourishment and care our cattle population is now a liability rather than an asset. In order to face this situation of feed and fodder crises and to give better nutrition to our cattle there should be a properly prepared plan with specific budgetary provision for fodder cultivation.

The high prices of feed and fodder in the rural areas have restrained the farmer-producers and also the commercial producers from maintaining cows and buffaloes. The competition between the human and livestock population in regard to the food crops has been aggravated. The explosive human pressure on the inelastic land and heavy requirement of foodgrains have brought about 75 per cent of the total area under food crops. The area under fodder crops is only 4.5 per cent of the cultivated area in the country. The effect of the green revolution is the diversion of the attention of our agriculturists to the production of human food only, such as wheat, rice, maize, etc., and suspension of production of feed and fodder.

In the developed countries the productivity of milch cattle is largely sustained by pasture. The pasture is rich is nutrients and the animal takes it directly by grazing, involving no cost for cutting, transporting, chaffing and stall feedings. Contrary to this picture our country does not have any such pasture land selected for grazing. In West Bengal specially no pasture can be had of any consequence to dairying. The only availability is paddy straw which is also dry. It fills the cow's stomach but do not furnish very much nutrient. Even in these days the cost of paddy straw has grown high. The concentrate mixtures are sold at higher rates. Other feeds like Kolai Bhushi, Arohar Bhushi, Molasses and Oil Cake are all in short supply,

Survey conducted by I.A.R.S. to estimate the cost of production of milk in different potential belts of the country has observed that feed amounts to 70% to 75% of the total cost of production of milk. There is a positive correlation between net expenditure, milk yield and the value obtained. This proportion has recently increased in West Bengal.

In view of the feed and fodder scarcity there has been some talks for establishment of feed manufacturing plants at different centres. In the Fifth Five Year Plan sanction has been made for the establishment of a few feed plants in the country which will partly solve the problem. If a continuous flow of milk is expected in a city or in the collection points the Government should undertake (a) development of a series of green belt of grass land farming in the commanded area of Milk Supply Scheme, and (b) ration distribution of feed and concentrates through Chilling Plants to the producer-suppliers at subsidised rates.

Fodder development programme forms an integral part of milk production. Intensive research is being carried out at the Indian Grass Land and Fodder Research Institute, Jhansi, N.D.R.I. Karnal, I.A.R.I., New Delhi, and in various agriculturai universities for developing high yielding nutrition varieties of fodder crops. Cultivation of perennial grasses like hybrid napir, para grass, leguminous crops like berseem, lucerne, cow-pea and cereal fodder crops like hybrid maize, M.P. jowar and their use in feeding the livestock are already bearing fruits by giving economic returns through milk production to the farmers in many parts of the country.

Government's Milk Scheme

The Greater Calcutta Milk Supply Scheme has been operating plants, one is in Haringhata and the other is at Belgachia. Under this scheme there are also 20 Chilling Plants in the milk potential areas collecting milk daily for processing in these plants.

The Greater Calcutta Milk Supply Scheme has increased the handling capacity of milk from 1.40 ('68-69) lakh litres to 2.08 lakh litres during the last three years. The increase was effected by the use of sufficient quantity of skim milk powder and butter oil obtained from World Food Programme through Indian Dairy Corporation and from the quantity of milk powder received under the commercial quota. As pointed out earlier, the availability of milk from the rural areas is small and the rate of intake of milk in Government Chilling Stations has fallen gradually under the pressure of chhana and sweetmeat trade.

Table showing daily sale of milk by Greater Calcutta Milk Supply Scheme (in litres)

Year	C.M.	S.M.	D.T.M.	Total
1966-67	40,104	73,314	18,404	1,37,822
1967-68	8,296	74,190	53,439	1,35,925
1968-69	8,631	1,12,260	20,953	1,41,844
1969-70	18.590	1,05,318	19,729	1,43,707
1970-71	19,168	96,134	17,125	1,32,527
1971-72	18,870	1,00,308	18,201	1,37,379
1972-73	22,694	1,15,371	27,491	1,59,556

As a result the Government has to depend on this imported milk. In the year 1969 daily consumption of milk powder for the preparation of fluid was 6.62 M.T. only. The quantity has doubled in 1972-73 to 12.95 metric ton. In the year 1973-74 the average consumption of S.M.P. has increased to 16.00 M.T. and 3.5 M. T. butter oil per day. Recent curtailment of this S.M.P. quota (from 16 M.T. to 12 M.T.) allotted so long all on a sudden has pushed Greater Calcutta Milk Supply Scheme into a precarious position.

Unforeseen circumstances like this on which the scheme has no control can only be overcome by extensive drive for procurement of milk from rural areas by offering higher prices to the producers putting some restrictions on the competitive trade of chhana and sweetmeat and demanding an increased quota of S.M.P.

Conclusion

One of the most difficult aspects of world food problem is to provide supplies of protein-based food for the maintenance of good health and prevent the occurrence of malnutrition among the children. Milk has been assigned the foremost role in preventing deficiencies of protein intake. Milk is considered also as nature's perfect food as it contains all essential ingredients for the normal growth of human body, especially in the vegetarian country like India. Successive Five Year Plans have rightly suggested the development of milk supply in an organised way in our country. Presently there are 130 dairy plants (77 liquid milk plant, 7 milk product factories, 3 creamaries and 4ᴗ pilot schemes) in operation in the public and co-operative sectors.

A massive dairy development programme has been undertaken during the fifth Plan period through World Food Pragramme—618 Scheme. The project's milk marketing and dairy development programmes are currently under implementation in the country. Under this programme an amount of Rs. 95.40 crores will be generated through the sale of recombined milk supplementing the milk supply in Calcutta, Bombay, Delhi and Madras, out of this West Bengal will have Rs. 22 crores for dairy development—construction of a new dairy at Dankuni, (Calcutta), establishing cattle farms, fodder farms, supply of exotic animals, expansion of cross-breeding works and health care. In addition the project envisages development facilities for chilling and processing of milk and establishment of feeder balancing dairies at potential areas. In addition, in West Bengal during Fifth Five Year Plan an amount of Rs. 6 crores has been alloted for the purpose of dairy development. The Government will take up the establishment of two dairies and one product plant during this period. The scientific knowledge gained through researches in the various fields of dairy and animal husbandry has paved the way for increasing the milk production in the country. Our endeavour is to reach national minimum standard of 168 grams on an average as specified by National Dairy Development Board. Implementation of various schemes will help in producing more milk to meet the requirement of the people. It can be stated that the required goal can be achieved through the overall improvement of breed, feed and management and getting off uneconomic animals so that more feed is available to economic animals and milk production becomes a profitable concern. The problem of surplus cattle therefore deserves serious attention in planning dairy development programmes in the microregions.

Economic and Operational Efficiency in Marketing of Apple in Kashmir

H. S. Aulakh* and M. K. Dhar**

Development of marketing is an integral part of agricultural development of a country. An efficient and reliable marketing system by itself can stimulate increase in production, while lack of it would lessen, subdue and shrink the impact of any number of developmental efforts. Marketing influences economic transformation of a subsistence agriculture by affecting prices, marketable surplus, capital formation, creation of demand and market infrastructure. The perusal of the history of the most developed countries reveals that the development in the market structure lagged begind the development in production technology. This in most cases served as a bottleneck for economic transformation.

The development of a suitable market structure assumes much greater importance in case of perishable commodities like that of fruits and vegetables. In case of these commodities marketing costs form a sizeable proportion of total cost of production. As such, any attempt directed towards reducing marketing costs would affect favourably the producer-sellers and the consumers.

The term marketing efficiency is a very broad term. Economic efficiency stands for the realisation of maximum output from given resources. It seeks to eliminate the wastes, costs, exploitative profits and ultimately raises producers share in consumer's rupee. No doubt, the producer's share in consumer's rupee would depend on a host of factors like perishability of product, marketing services performed and the physical distance between the producer and the consumer. Besides, it would also depend on market channels selected by the producer for the the disposal of his produce.

The examination of the market structure, conduct and performance of fruits in India have rather remained unattended and under-

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developed tool of economic analysis. Since a lot of interest has been shown in the development of apples in India, it is expected that under the influence of increasing per capita income and general awareness the demand for fruits would increase.

As an economic enterprise apple cultivation has a great commercial content. A gross income of more than Rs. 30,000 per hectare is no longer a surprise from a well-maintained apple orchard.[1] There exist wide inter-market and inter-temporal price differentials. The former hints at the spatial aspect of market imperfections, whereas the latter reveals the temporal aspect of market structure. The hypothesis empirically verified is that from the point of view of space and time the apple markets are not well-interacted.

Specifically stated this paper aims at the examination of the following aspects of apple market structure in Kashmir State :

1. Comparative returns from marketing of apple through different channels, and
2. Price differentials between producing and distibuting markets.

Design of Study

Multi-stage sampling design was used for the selection of the ultimate units of study. Barmula district of Kashmir State was purposely selected. This area is known for apple production in the State. Three blocks, out of the 13 blocks, functioning in the district were selected randomly. The selected blocks included Pattan, Sopore and Rajwara. Six villages in all (two from each block) which were relatively more important in terms of large number of orchards, geographical area and marketed surplus of apples were selected to obtain the basic data of the prevalent market structure. Eight per cent of the growers, with a minimum of 5 growers from each village were selected at random. A schedule especially designed for this purpose, after pretesting, was administered to growers through direct personal interview method.

Secondary data on prices of apples in the Delhi market were obtained from the published sources. The nature of trend and seasonal pattern of apple's prices were studied through regression and time series analysis.

For finding out the most profitable marketing channel the technique of partial budgeting analysis was used.

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[1] H. Singh and T. R. Chadha : Horticultural Research and Development in Himachal Pradesh, Department of Agriculture, H. P., Simla.

Results and Discussion

Marketing System for Apples in Kashmir

During the course of field investigation it was observed that in the specialized areas of apple production, a variety of marketing agencies are found. These agencies are mostly privately owned by private individuals, corporations, partnerships and cooperatives.

In some cases these agencies maintain packing plants and transport, and operate cold storages. Contracts are made with the growers for the delivery of their produce at harvest time. Cash is paid to the farmers in advance. Apples are sold in the regulated markets through local dealers or distributors. Besides, there are many independent small buyers (dealers) who make outright purchases from growers and sell in terminal markets.

Marketing Channels

Apples pass through different channels in the privately managed marketing system. The important channels through which apples are passed on to ultimate consumers included :

1. Sale through pre-harvest contractor
2. Sale through commission agents
3. Sale through wholesaler
4. Sale through cooperative society, and
5. Sale direct to consumer.

The details of the relative share of each channel as revealed by the sample growers is shown in Table 1.

It will be seen from Table 1 that 51.67, 33.34, 8.33, 1.66 and 5.00 per cent of the apple growers sold apples through pre-harvest contractor, commission agent, wholesaler, cooperative society and directly to the consumer respectively. Thus, the sale through pre-harvest contractor dominated the marketing system. Another interesting feature identified is that the preference for this agency (pre-harvest contractor) diminishes as the farm size increases. This is perhape due to fact that those growers who select this agency do not enjoy sound economic base.

Commission agent channel found preference with large category of farmers. Only a few apples growers, that is three (5 per cent) sold apples direct to consumers. Mostly, these growers belonged to the category of small-sized orchards. Sale through cooperative society assumed only a negligible proportion.

Table 1

Distribution of Growers by Farm Size (orchards) and their Methods of Sale of Apples through Different Agencies, 1972-73

Agency	Farm Size Situation Small (Less than 1 acres)	Medium (1-2 acres)	Large (2 and more acres)	Total
1. Pre-harvest Contractor	21(60.00)	7(46.67)	3(30.00)	31(51.67)
2. Commission Agent	11(31.42)	4(26.67)	5(50.00)	20(33.34)
3. Whole saler	1(2.85)	2(13.32)	2(20.00)	5(8.33)
4. Cooperative Society	—(—)	1(6.67)	—(—)	1(1.66)
5. Direct to Consumer	2(5-73)	1(6.67)	—(—)	3(5.00)
Total	35(100.00)	15(100.00)	10(100.00)	60(100.00)

Marketing Margins

Marketing margin refers to the difference between value of physical quantity equivalent at different levels of marketing. It is shown by the spread between prices paid and received by any agency. These marketing margins were found in terms of rupees per standard box and as a percentage of the price paid by the consumer of declicious apples.

It will be seen that the net per cent share to grower was 35.09, 46.89, 49.75, 50.72 and 89.30 per cent of consumer's price, when the apples were sold through the per-harvest contractor, commission agent, wholesaler, cooperative society and direct to consumer respectively. As such, it pays to growers to sell apples direct to consumer. But unfortunately this agency was least preferred by sample farmers. The sale through the pre-harvest contractor dominated and between the farm size, it varied inversely with the size. (Table 1). The perference for pre-harvest contractor by the small farm size farmers hints at their poor economic strength. The sale of cooperative assumed only a negligible proportion. However this was identified as the second best channel. This means that the producer-farmers have not fully understood the advantages of sale of apples through the cooperatives.

Structure and Behaviour of Prices

The price structure indicates the performance part of the market structure. It brings out whether the existing market structure is adequate or not in performing the functions expected of it. The price structure was examined in terms of behaviour of prices, seasonal movements in prices and price differentials between producing and distributing markets.

Trend in Apples Prices

The average wholesale annual price data of apple for Delhi market was obtained and the trend equation was fitted through least square method. The results obtained are shown in Table 2.

Table 2

Actual Average and Estimated Trend Prices per Quintal of Apples in Delhi Market, 1962-63 to 1972-73

Year	Prices in Rs. per Quintal	Trend Value $Y=237.32+16.09x$
1962-63	214.25	237.32
1963-64	227.08	253.41
1964-65	312.41	269.50
1965-66	302.83	285.59
1966-67	287.25	301.68
1967-68	339.50	317.77
1968-69	352.25	333.86
1969-73	318.41	349.95
1970-71	370.08	366.04
1971-72	271.91	382.13

It will be seen from Table 2 that the trend in price movement continued to be in the upward direction. This was in consonance with the expected trend in prices resulting from general price rise, increase in per-capita income and high income elasticity in terms of demand for apple.

Seasonal Price Variation

The seasonal price index is a statistical device used to measure the tendency for prices to repeat during different months of the season of the year. The twelve-month moving average was used to work out the seasonality pattern of apple prices in Delhi market. To work out the seasonal index the orginal data on prices were divided by price trend.

After eliminating the irrigular fluctuations, the adjusted specific seasonal index was worked out and is shown in Table 3.

Table 3

Index of Seasonal Price Variation in Apple in Delhi Market

1963-72

Month	Indices	Months	Indices
September	80.85	March	101.68
October	76.14	April	114.78
November	77.39	May	127.79
December	79.68	June	142.67
January	83.16	July	133.42
February	90.37	August	91.97

Table 3 shows that apples prices are charaterized by wide fluctuations over time. Judged from the temporal aspect the market appears to be imperfect. Wide variations in the pattern of price seasonality of apple are due to the variations in arrivals, stocks and weather conditions.

It will be seen from table 3 that the index of price variation of apple was the lowest in the month of October (76.14) followed by November (77.39). These were the months when the markets were glutted with apple arrivals. Thereafter price began to firm up month by month and reached its peak in the month of June (142.67) followed by July (133.42), when the supply of apple came only from cold storage.

Spatial Price Differentials

The price differentials per standard box in the three markets, that is, Jammu, Amritsar and Delhi, were analysed. Jammu, amongst these markets, is a distributing market for Punjab, Haryana and Chandigarh, while Delhi is a distributing market for Southern States of the country. The analysis of variance technique was applied. Each market and month was considered as independent. The variations in the prices of apple were computed by applying 'F' test. The following results were obtained.

The calculated values of 'F' for both the varieties corresponding to markets as well as months were significant at 5 per cent level. It can, thus, be concluded that there existed wide variations in the prices of apple during different months of the season as well as in the spatially separated markets.

Table 4

Analysis of Variance Table

Source of variation due to	D.F.	S.S.	M.S.S.	F Calculated Value
		Delicious Variety		
Markets	2	1300.67	650.335	81.292
Months	3	1022.00	340.666	45.583*
Error	6	48.00	8.00	
		American Variety		
Markets	2	620	310.335	164.372*
Months	3	76.67	25.556	22.556*
Error	6	11.33	1.888	

* Significant at 5 per cent level.

Conclusions

The following broad conclusions emerged from the study.

1. Sale of apples through pre-harvest contractor dominated and varied inversely with the farm size.
2. The most profitable channel for marketing of apples was direct sale to the consumer by the farmer.
3. Over the period 1962-63 through 1972-73, the prices of apples showed an increasing trend.
4. Wide temporal and spatial price variations were observed indicating thereby that the apple market structure suffered from temporal and spatial market imperfections.

INDEX NUMBERS OF WHOLESALE PRICES IN INDIA

(New Series)

(Base : 1961-62=100)

Year/Month	General Index (All Commodities)	Year/Month	General Index (All Commodities)
1973—		1974—	
August	251.1	January	271.2
September	250.3	February	275.0
October	255.2	March	283.6
November	260.0	April	289.9
December	262.0	May	298.9
		June	306.0
		July	315.1
		August	323.4

Source : Office of the Economic Adviser, Ministry of Industrial Development, Government of India.

Some Reflections on Economic Development of Tribal Farms in Uttar Pradesh

J. P. Bhati[1], T V. Moorti[2] & L. R. Singh[3]

Introduction

Economic performance reflected through productivity varies from region to region and from one class of people to another depending upon the resources availability and their capacity to utilize these resources in better ways. In creating conditions for economic development of any region, it has been found that such a plan must provide for economic adjustment and for cultural change. Changes in traditional behaviour necessary for economic growth will be adopted only if considerable creativity is devoted to the task of making them acceptable. It is generally believed that tribal agriculture is characterized by very low agricultural productivity. Most of the authors on tribal agriculture have attributed this low productivity to the apathy of the tribals towards improved methods of agriculture. However, very few authors have endeavoured to define this apathy in terms of attitudes of the tribals towards work and life. For taking appropriate policy measures for eradicating the economic backwardness, it is necessary to indentify the factors which are responsible for economic backwardness of tribal farmers in any area. The questions tackled in this paper are : What is their agricultural performance ? And what types of social and economic policies are necessary to provide equitable returns and opportunities to this important stratum of rural population in Uttar Pradesh ?

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The Farmers Under Study

In the tarai area of Uttar Pradesh one finds highly progressive and prosperous farmers as well as poor Tharu tribal farmers. Tharus are the main tribe of Uttar Pradesh. They are found in a great number in the areas of Kalka Valley to Kotdwar, the tarai of Nainital and Kheri Lakshmipur Districts and Nepal border to Gorakhpur. Tharus are originally from Thar desert of Rajasthan, that is why they were called 'THARUS' in their new setting. Agriculture is tharus' main occupation. They also keep cows. Tharus are self-sufficient in themselves. Kitchen gardening, weaving, carpentering, etc. are done by themselves.

This study was conducted in Khatima Block of district Nainital (U.P.). Four villages inhabited by tharu tribals were selected randomly. The cultivators from these villages were divided into small and large categories in accordance with their operated land holding, and a 15 per cent sample from both the categories was selected randomly. Forty farmers were selected in all. Out of this 18 farmers were in the small size group having holdings less than 8 acres. In the large size group having a holding size of more than 8 acres there were 22 farmers. Data were collected by personal interview method pertaining to the agriculture year 1970-71.

Attitudinal Analysis

In order to find out the attitudes of the cultivators towards changes in agriculture, aspirations and degree of self-reliance, thirteen statements (given in Table I) were included in the interview schedule. Based on the responses to these statements[4] an index of innovativeness was prepared by giving weighted scores to various responses. The weights to the responses were assigned as follows :

Statements from serial number 1 to 8 have been given scores of 3, 2, and 1 for agree, undecided and disagree, because those who agree with these statements show a higher degree of innovativeness. On the other hand, the statements from serial numbers 9 to 13 have been given scores of 1, 2 and 3 for agree, undecided and disagree, because those who agree with these statements show a lower degree of innovativeness as compared to those who disagree.

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[4] "Attitudes can be measured only on the basis of inferences drawn from the responses of the individual toward the object, his action and his verbal statements of belief, feeling and disposition to act with respect to the object. An attitude scale consists of a set of statements or items to which the person responds."—Krech, D. Crutchfield, R. S. and Ballachey, E. L. (1962) ; Individual in Society, McGraw Hill Book Company, New York, p. 147.

Table I

Mean Scores of innovation Response Items

S. No.	Statement	Tribals	Non-Tribals
1.	Do you want to learn new ways to farm ?	2.775	3.000
2.	Would you like to work for wages away from your farm ?	2.000	2.350
3.	If a farm demonstrator gives a talk, would you attend ?	2.600	3.000
4.	A man can usually better himself by hard work.	2.575	3.000
5.	Do you think it is wise to borrow money ?	1.825	2.000
6.	Do you want to change your way of life ?	2,525	3.000
7.	A steady or regular job is good for a person.	2.850	3.000
8.	Do you think you will live better in future ?	2.950	2.900
9.	A farmer should try to farm the way his parents did.	2.450	2.700
10.	Do you want your sons to be farmers ?	1.575	2,000
11.	It is too risky to try new way to farm.	2.450	2.700
12.	It is better to enjoy today and let tomorrow take care of itself.	2.775	3.000
13.	A man's future is in the hands of God.	1.425	2.150
	Average innovativeness score	2.367	2.577

Chi-squase (x^2)=2.727 with 1 degree of freedom.

An innovative mean score for total statements as well as each statement was calculated by summing up the weighted scores and dividing by the number of observations. The assumption was that those with the highest mean scores strongly favoured change and those with low scores did not. The mean scores are given in Table I.

Average innovativeness score indicates that Tharu tribals are innovative to a considerable extent. Based on the total scores for these statements, a mean score was worked out for all respondents. This mean score on innovativeness was related with tribal and non-tribal[5] groups and the Chi-squre (x^2) test showed that there is no association between the two. This shows that the tribals do not significantly differ in the degree of their innovativeness. This means that at the 'mental evaluation level,' the Tharu tribals are as responsive to changes as non-tribals. Thus, the reasons for their low adoption and poor agricultural performance have, therefore, to be sought in factors other than their apathetic attitudes towards change.

Adoption of New Farm Technology

To have an idea about the dimension of progressiveness of Tharu agriculture, it would be helpful to study the extent of adoption of improved agricultural inputs (Table II). About two-thirds proportion of total farms is completely unirrigated. Although proportion of farmers using irrigation facilities is much higher in the large size group but when proportion of sown area irrigated is compared there is not much difference between small and large size farms. However, HYV of wheat and rice have penetrated into this tribal belt, but still are in the 'trial stage' as only 3.23 and 4.22 per cent

Table II

Agricultural Performance of Tribal Farms (1970-71)

Item	Small	Large	Average
1. % of farmers using irrigation facilities :			
(a) Owned Source	5.5	22.7	15.0
(b) Govt. Canal	16.7	18.2	17.5
Total	22.2	40.7	32.5
2. % of sown area irrigated :			
(a) Kharif	8.57	9.75	9.46
(b) Rabi	4.97	6.83	6.38
Total	6.97	8.44	8.08
3. % of farmers using HYV :			
(a) Paddy	11.11	13.64	12.50
(b) Wheat	11.11	9.09	10.00
4. % of Crop area under HYV :			
(a) Paddy	14.02	0.99	4.22
(b) Wheat	7.82	1.15	3.23
5. % of farmers using fertilizers :	27.7	27.3	27.5
6. Per farm expenditure on fertilizers (Rs)	132	155	145
7. Agricultural gross income (Rs) :			
(a) per farm	2,092	5,679	4.062
(b) Per acre	379	329	340
(c) Per capita	317	536	462
8. Holding size (Acres)	5.52	17.25	11.97

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5. For comparison twenty non-tribal farmers comprising 10 small and 10 large representing the two size groups of holdings from the neighbouring two non-tribal villages were selected at random.

area of the respective crops have been devoted for them. Surprisingly small farmers are somewhat more advanced than large farmers in this respect. This may be due to the intensive nature of cultivation which may not be possible on large scale for the tribls with their existing resource positions. Only 27.5 per cent farmers are using chemical fertilizers and that too is not used in sufficient amounts. Again per acre fertilizer expenditure is more on small farms than on large farms, where it is spread more thinly. However, incidences of diseases and pests were reported but the use of plant protection measure to save the crops is negligible. The reason for this is that farmers are lacking in 'know-how' to use specific plant potection measures in correct form and amount. Although every farmer was having mould-board iron ploughs but other modern farm machines (bullock or tractor-drawn) were not existing on these tribal farms. Per farm as well as per acre and per capita agricultural gross incomes are very low reflecting their low yields and subsistence nature of agriculture.

Resource Use Efficiency

To examine the managerial ability of Tharu tribals as well as weaknesses in their production programmes, i.e. whether resources are combined in the efficient way to insure maximum production, we fitted a Cobb-Douglas type of production function, where total crops income per farm (Y) is dependent variable and operated area (x_1), human labour (x_2), bullock labour (x_3) and capital expenditure, i.e. expenditure on seeds, fertilizers, irrigation, etc. (x_4) are independent variables. It is evident from marginal value product/factor cost ratios that tribals are irrational in their resource allocation. The farm resources which have significant impact on crop income have been used in excessive quantities. The non-significant coefficient of capital on tribal farms is due to the extremely low level of capital expenditure on these farms. Thus, there is excess use of human and bullock labour and very low expenditure on HYV seeds, fertilizers and irrigation. (See table III). The marginal value productivity (MVP/Factor cost ratio) of capital expenditure is quite high (5.36) which indicates a vast scope of investment on capital inputs for increasing production.

The amount of savings and of credit available as capital for investment are important economic factors influencing growth. Borrowing (credit) constitutes about fifty per cent of total investment on small farms and on the other hand on large farms more than seventy-five per cent investment was from owned funds (savings).

Table III

Investment Pattern on Tribal Farms (1970-71)

(Rs./Farm)

Inputs of Expenditure	Small	Large	Average
Short-Term Investment :			
1. HYV Seeds	7	3	5
2. Fertilizer	37	42	39
3. Irrigation	9	65	40
4. Hired Labour	135	621	402
5. Livestock	86	200	149
6. Others	21	58	42
Total	295	389	677
Long-Term Investment :			
1. Livestock	77	188	138
2. Irrigation	50	434	261
4. Machinery	9	40	27
4. Farm Buildings, etc.	150	545	367
Total	286	1,207	793
Grand Total	581	2,196	1,470
Investment from :			
(a) Owned Funds (Savings)	310	1,736	1,095
(b) Borrowed Funds (Credit)	271	460	375

Production Function :

$$Y=7.79\; \underset{(0.183858)}{x_1^{\overset{**}{0.376581}}}\quad \underset{(0.133967)}{x_2^{\overset{*}{0.268271}}}\quad \underset{(0.140606)}{x_3^{\overset{**}{0.367520}}}\quad \underset{(0.030002)}{x_4^{0.033480}}$$

MVP/Factor cost ratio : 0.50, 0.32, 0.81 and 5.36 respectively. Figures in parenthesis denote standard error of respective coefficient.

** Significant at 5 per cent level.

* Significant at 10 per cent level.

On an average there is investment of Rs. 1,470 per farm of which one-fourth is from credit. To achieve an economic scale of operation the need for additional investment on HYV seeds, fertilizers and irrigation out of internal savings poses exceedingly difficult problems for these tribal farms. Thus such adjustments are obviously difficult without the help from outside either through grants or credit.

Credit Supply

Co-operative societies are providing about 40 per cent credit which is followed by commercial banks, local money lenders and loans from the Government. (Table IV). However, the Government is providing help through Block Officers to the small tribal farms and has one-fourth share in the toal credit supply but they are still under substantial hold of local money lenders. Commercial banks are concentating on large farms only because small tribal farms are considered uncreditworthy. Banks should come forward to rescue these small farmers by providing liberal credit facilities taking into account their potential credit-worthiness.

Table IV

Amount of Credit Obtained from Different Sources (1970-71)

Source	mall	Large	Average
		Percentages	
1. Co-operative Societies	43	40	41
2. Commercial Banks	—	39	26
3. Local Money Lenders	32	14	20
4. Grants & Loans from Govt.	25	5	12
5. Relatives & Friends	—	2	1
Total	00	100	100
Total amount (Rs./farm) over which percentages were computed	271	460	375

Sources of Knowledge

Today traditional societies are changing because knowledge and contact with the outside world have caused changes in their behaviour. A change is introduced from sources external to the social system. It may be of two types : (i) selective, or (ii) directed. Communication is inherent in both types of social change. Economic measures are a type of directed social change. New ideas are introduced into a social system in order to attain higher incomes and levels of living through more modern methods of production. The tendency of farmers follow the prescribed ways of their ancestors may be attributed to their lack of technical knowledge about available alternatives. Hence the state of scientific and technical knowledge has an important influence on economic growth. Whether or not such knowledge is available determines whether growth would occur. Table V shows the proportion of farmers receiving agricultural information from different sources. We found that in Tharu tribal community the role of local elite

Table V

Sources of Agricultural Information (1970-71)

	Source	mall	Large	Aver
			Percentages	
1.	Local Leaders	78	73	75
2.	Relatives	39	54	48
3.	Extension Staff	24	25	25
4.	Radios	17	23	20
5.	Others	11	9	10

Note: Many farmers received information from more than one source.

(fellow cultivators) as a source of agricultural knowledge is more significant irrespective of farm size. Mass media like radio has very little share in disseminating new ideas. Only 25 per cent farmers are in touch with extension staff. It may be noted in this connection that if any change is to be introduced in this area with minimum efforts and time, firstly local leaders should be approached and convinced for adopting the change (a new idea), and they will take care of others regarding disseminating that change in the society.

Farm Problems

To know the reasons of low impact of new farm technology and irrational behaviour in resource allocation, farmers were asked about their major difficulties which worked as impediments in farm improvements. It was reported (see table VI) that the foremost problem faced by them is with repect to irrigation followed by supply of credit, fertilizers, HYV seeds, knowledge of modern imput mix and transport facilities. The tribal area under study is not well connected with the outside world as there are no proper roads and adequate transport facilities. Due to absence of such facilities, the flow of information into the area is considarably hampered. Moreover, with adquate

Table VI

Farmer's Main Difficulty for Agricultural Development

	Difficulty	% of Farmers
1.	Irrigation	40
2.	Credit	20
3.	Fertilizer	15
4.	HYV Seeds	10
5.	Agril. Knowledge	8
6.	Transport	7
	Total	100

communication and transport facilities, the farm inputs can easily be supplied and tribals can market farm produce more profitably.

Priorities for Further Investment

Since irrigation is a pre-condition for adoption of modern farm technology, investment on irrigation is desired and it acquired farmers' highest priority in this tribal area. This is followed by that of fertilizers, HYV seeds, farm animals, land improvement and investment in buildings (Table VII). None of the tribal farmer is willing to invest on farm machinery. The major reason for this reluctancy of investment in machines may be due to their lack of knowledge to operate farm machines effectively.

Table VII

Farmer's Main Priority for Future Investment

Item	% of farmers
1. Irrigation	70
2. Fertilizers	10
3. HYV Seeds	8
4. Livestock	7
5. Land Improvement	3
6. Buildings	2
Total	100

These investment priorities give an indication about the further course of action of these farmers, which they will take to improve their farm business. This also indicates that Tharu tribals have receptivity for change and they have indentified their farm problems. Thus, to meet the farmers' near future demand for the above mentioned items, necessary arrangements of adquate and timely supply of these items as well as credit and related agricultural information will help in fulfilling the desired goals of the farmers. Hence, the problem of economic growth of Tharu agricultural information will be solved by accummulation of capital inputs and the development of human skill which will result in higher productivity of labour and capital.

(Continued from page 496)

Table 4

Ex-Factory Value of Industrial Output in West Bengal and India
(In crores of Rupees)

Years	India	West Bengal	West Bengal's % Share
1963	4501	1038	23.1
1964	5626	1207	21.5
1965	6502	1278	19.7
1966 (P)	7213	1453	20.1
1967 (P)	7783	1429	18.4
1968 (p)	8637	1416	16.4

Source : Economic Review, West Bengal.
P=Provisional,

Table 5

General Index of Industrial Production in West Bengal & India
(1963=100)

Years	India	West Bengal
1964	108.6	106.6
1965	118.6	112.8
1966	117.7	104.8
1867	116.7	103.1
1968	124.2	104.3
1969	133.0	99.3

Source : Handbook of Statistics, 1972-73, E.A.I,

Table 6 (A)

Employment in Resistered Factories of West Bengal

Years	No. of Regd. Working Factories	Daily Employment (in Lakhs).
1963	5010 (P)	8.17
1964	5233 (P)	8.54
1965	5643	8.80
1966	5714	8.40
1967	5658	8.32
1968	5737	8.17
1969	5599	7.91

Source : Economic Review, West Bengal, 1966—1972.

In the field of employment also, the performance of West Pengal in this period was discouraging. Her proportion of employment in All-India Census Sector Industries dwindled from 23.1% in 1963 to 22.1, 21.69, 20.9 and 18.41 per cent in 1965, '66, '67 and '69 respectively. While the number of daily employment in registered working factories in West Bengal was found to be rising up to 1965 (8.17 in 1963 to 8.8 lakhs in 1965) but started receding from 1966 onwards (8.40, 8.32, 8.17 and 7.91 lakhs in 1966, 1967, 1968 and 1969 respectively).

Table 6

West Bengal's Percentage Share in All-India Census Sector Industries

Years	Productive capital	Employment	Value of output	Value added by manufacture
1963	21.35	23.01	22.81	22.88
1964	19.65	22.00	21.77	22.39
1965	19.4	22.1	21.2	20.8
1966	18.3	21.69	20.03	19.07
1967	17.5	20.9	18.37	18.03
1968	N.A.	N.A.	N.A.	N.A.
1969	14.81	18.41	15.41	14.95

Source : Annual Survey of Industries—General Review.
N.A.=Not Available.

Table 7

Percentage Share of W. Bengal in Engineering Production of India

Years	No. of Regd. factories	No. of Employee	Productive capital	Total output	Value added by manufacture
1963	23.5	30.0	30.0	33.2	34.5
1964	22.1	30.4	29.4	33.4	33.7
1965	22.0	29.3	28.8	29.9	30.8
1966	23.2	30.0	28.4	27.2	26.5
1967	21.6	27.4	26.4	23.2	24.5
1968	18.8	24.5	24.0	21.7	21.0

Source Handbook of Statistics—E. A. I. Pp. 73-74, 1971-72.

The percentage share of West Bengal in engineering activities also registered a declining trend in so far as :

(a) number of registered factories, (b) persons employed, (c) productive capital, (d) total output, and (e) value added by manufacture were concerned. Thus the proportion of registered factories in the engineering industry in West Bengal fell from 23.5% in 1963 to 22.1, 22.0, 23.2, 21.6 and 18.8 per cent in the succeeding years. Her share in total productive capital in the engineering sector declined from 30.0% in 1963 to 29.4, 28.8, 28.4, 26.4 and 24.0 per cent in the next six years. The proportion of persons employed, came down from 30.4% in 1964 to 29.3%, 30.0%, 27.4% and 24.5% in 1965, '66, '67 and '68 respectively. While West Bengal's contributions to the total output produced and value added by manufacture in the engineering activities in India started receding from 1965 and 1964 respectively.

So far we have discussed the general trend of economic activities in West Bengal in terms of certain selected variables. Among these variables, it appears West Bengal's share in net national output, Calcutta Zone's share in total engineering exports of India, employment and registered factories and the general index of industrial production started receeding either from the year 1966 or 1966-67. While West Bengal's share in total ex-factory value of industrial output, her relative share in all-India Census Sector industries in terms of (a) productive capital, (b) employment, (c) value of output, and (d) value added by manufacture had began to decline from 1964. The percentage share of West Bengal in engineering output for India as a whole also started falling from 1964 in respect of (i) number of registered factories, (ii) productive capital, and (iii) value added by manufacture. In respect of total output and employment, the downward trend started from 1965.

Let us now examine separately the condition of a few important industries in West Bengal. It is interesting to note that in most of these industries, the proportion of West Bengal's output to all-India output dwindled between 1965 and 1968. The industries producing mill-made cloth, cotton-yarn, electric fans, sewing machines, railway-wagons, electric lamps, steel castings, air-conditioners, razor-blades, bi-cycles, storage batteries, paints and varnishes, paper and paper-boards, rubber foot-wear, refractories and sulphuric acid recorded a sharp fall in relation to the national level of output.

In industries like, sulphuric acid, paper and paper-board, cotton yarn and cloth, finished steel, pig iron, bi-cycle (complete), railway-wagon, electric fan, and sewing machine, the contribution of West Bengal to the national output began to decline even as early as 1964 or 1965.

Let us now consider the growth of employment, total output and value added by manufacture of 19 major industries under census sector in West Bengal, as stated below (The census sector covers all the registered factories employing 50 or more workers using electricity or 100 or more workers without electricity :—

Srl. No.	Industry
1.	Tobacco Manufacturing
2.	Spinning and Weaving
3.	Knitting Mills
4.	Textiles
5.	Paper & Paper Board
6.	Printing & Publishing
7.	Tanneries
8.	Rubber Products
9.	Iron & Steel
10.	Motor Bi-cycle
11.	Electric Machinery
12.	Rail-road Equipment
13.	Metal Products, except Machiaery & Transport Equipment
14.	Machinery except Electricals
15.	Motor Vehicles
16.	Non-ferrous Metals
17.	Basic Industrial Chemicals
18.	Non-Metallic Mineral Products
19.	Ship-building and Repairing

It was found that over the period 1962-69, employment remained more or less same in the case of 3 industries (Item Nos. 7, 8 and 15) and fell in the remaining 16 industries. The downward trend started in the case of paper-board industry from 1964, in textiles from 1965, in industries numbered 2, 6, 9, 11, 13, 16, 17 and 19 from 1964, in those numbered 1, 3, 14 and 18 from 1967 and in those numbered 10 and 12 from 1968.

So far as total output is concerned, the performance of 3 industries (No. 6, 15, 16,) remained more or less same, two industries (8, 10) recorded increase and the remaining 14 industries, registered decay. The output began to decline from 1965 in 4 of these 14 industries, (viz. 4, 9, 12, 19), from 1966 in the case of 3 and 13 and from 1967 in 6 industries (such as 1, 2, 5, 7, 11, 14). While in the case of basic industrial chemicals (17) and non-metallic mineral products (18): the shortfall first appeared in 1964 and 1968 respectively.

Value added by manufacture[1] is found to have increased in two industries (1, 8), experienced ups and downs in the case of five industries (3, 6, 10, 16 and 17) but decreased continuously in the case of the remaining 12 industries under review. Of these 12 industries, the decline started in 4 industries (viz. 4, 9. 12, 13) from 1965, in three industries (2, 7, 19) from 1966, in 14, 15 and 18 from 1967 and in 5 and 11 from 1964 and 1968 respectively.

We may now examine the yearly production trend of 40 selected industries in the factory sector which includes only those industrial units possessing not less than Rs. 7.5 lakhs of capital. Of them, five industries—electric pumps, paper and paper products radio receivers, soap and storage batteries (all being consumer goods industries) achieved steady increase in their yearly production over 1962-69. Production moved both upwards and downwards during this period in 3 industries namely, bi-cycle complete, electric lights and electricity generation. But the remaining 32 industries experienced almost a continuous deterioration in their yearly output over the period. Among these 32 industries, the shortage first appeared in ebonite and vanaspati industries from 1963, in 6 industries (viz. machine tools, dilling cutter, super phosphate, semi-finished steel, sheet glass and amonium sulphate), from 1965, in 9 industries (Asbestos Cement, Curbon Dioxide, Electric Fans, Enamel ware, Reamers, Steel castings, Steel ingots, Finished Steel and Sewing Machines, from 1966, in 4 industries—Plastic Moulding, Room-coolers, Paints and varnishes, Rectified Spirit—from 1967, in electrical motors, from 1968, and in 2 industries (Caustic Soda and Motor Starters) from 1969.

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[1] Value added by manufacture—computed by deducting the value of total inputs used in the production and depreciation changes from the value of the total output manufactured by the factory.

It is important to note that production fell most markedly in the case of industrial raw materials, chemicals and capital goods. So far as raw materials and capital goods are concerned, the downturn in production, in respect of the factory sector, cropped up first in the ebonite industry in 1963, then in machine-tools and pig-iron from 1964, then in Railway wagon, semi-finished steels and sugar-machinery from 1965) and in enamel ware, reamers, steel casting, steel ingots and finished steel from 1966. Under the census-sector, the indication of falling production was first noticed in iron-steel and rail-road equipment industries in 1965, followed by shipbuilding and metal production, except transport equipment and machinery, in 1966.

Turning to the consumer goods, we find that in the factory-sector the recession started with industries like vanaspati in 1963, sheet-glass in 1964, cotton-spinning and weaving in 1965 an asbestos cement, sewing machines and electrical fans in 1966. In the census-sector, the industries initially affected were textiles (1964), knitting mills (1966), and paper and tobacco manufactures (in 1967).

Among the chemical industries, the production began to deteriorate first in super phosphate and amonium sulphate from 1964, then sulphuric acid in 1965 and caustic soda in 1966 under the factory sector while in the census-sector the same trend developed in the basic industrial chemicals from 1964.

Now, so far as employment is concerned, the setback was first noticed in consumer goods industries like paper products in 1964, tobacco and cotton textiles in 1965 and spinning and weaving in 1966. While in capital goods and chemical industries (such as iron-steel, electrical machinery, shipbuilding, basic industrial chemicals, etc.) recession started from 1966.

From the preceeding analysis, we may say that :

(a) in a majority of the selected industries, under respective sectors, employment, production and value added by manufacture declined remarkably in the period under consideration.

(b) In most of them, this downward trend developed well before 1967-68. For example, with respect to the factory sector, production began to decline in 77% of such industries during 1963-66. The corresponding percentage for the census sector was 50%. While in 62.5% of the selected industries, the contraction of employment started in between 1963-66. The value added by manufacture also began to dwindle before 1967 in no less than 65% of the selected industries.

(c) In terms of production behaviour alone, the initial symptoms of recession appeared in both capital goods and consumer goods industries. Viewed from the employment angle, the downward trend started with the consumer goods industries. But considering all the variables together, it will be reasonable to argue that the recession was first felt in textiles, iron-steels, metal, except machinery, and transport equipment and shipbuilding industries. The rail-road equipment industry (particularly the wagon industry) may be added to this list although employment in this industry started to contract only in 1968 and later years. But the other variables showed continuous decline since 1965 in this industry.

We may therefore conclude this section with the following observations :

(i) West Bengal had to experience an industrial recession during the sixties.

(ii) Although it was intensified during the years 1967 and 1968, the seeds of the recession were actually planted as early as 1964-65. The Engineering Association of India also observes, "...the first signs of the current industrial recession were noticed around April 1965".

II

In this section, we shall deal with the possible causes of this recession. There were various factors at work which contributed in some way or other to the development of this downtrend.

An important cause may be found in the unequal growth of productive capacity on the one hand and effective demand on the other. It is interesting to note that in the period between 1959 and '65, while productive capacity (as reflected by the volume of productive capital invested) increased by about 20%, the corresponding growth in the effective demand (denoted by the value added by manufacture from a given amount of investment of productive capital) was only to the extent of 11.7%. During 1961-64, increase in capacity was 95% in West Bengal (against 160% in Maharastra) but the rise in effective demand was only 62%. Again, between 1964 and '67, capacity increased by 43% but effective demand by only 7%. In contrast, Maharastra's achievements were 47% and 30% respectively. Commenting on this aspect a survey on West Bengal says : "The gap between capacity-creation and effective demand brought out to the fore during the present recession, thus had its root in the preceeding period and manifested itself in the...differential between the rate of increase in investment on the one hand and those of income and employment on the other".[1] This lack of effective demand as compared to the rate of creation of productive capacity may well be regarded as a retarding factor.

Secondly, another reason was the under-utilisation of the available productive capacity. The volume of gross output produced with reference to a given level of investment may be taken as an indication of utilisation of corresponding productive capacity generated. While the productive (industrial) capacity in West Bengal rose by 95% in 1961-64, the increase in gross output was only 48%. Similarly, during 1964-67, the gross output increased by only 18% against a corresponding expansion of 43% in productive capacity. This disparity between the rate of growth in productive capacity and gross output indicates that the existing productive capacity was not fully utilised properly, higher amount of effective-demand could be produced through generating additional employment and income. "The rate of decrease in capital productivity, partly due to socio-economic-cum-administrative constraints resulting in the inability to use fully the productive potential arising from investment, has further retarded the rate of increase in income and employment. And this in its turn widened the gap between capacity-creation and effective demand."[2]

Thirdly, it appears that this relatively low effective demand together with under-utilisation of capacity deteriorated the investment-climate in the State resulting in a marked fall in the volume of investment. It is interesting to note that West Bengal's share of productive capital in All India Census Sector Industries and in All India Engineering industries declined steadily from 21.35% in 1963 to 14.81% in 1969 and 30.0% in 1963 to 24.0% in 1968 respectively. In contrast, Maharastra's share remained constant or declined slightly over the same period. While, the share of Tamil Nadu increased from 7.74% in 1963 to 9.37% in 1969 in the census sector and from 4.2% to 7.1% in engineering activities between 1963 and '68.

The amount of yearly collection of small savings in West Bengal also fell in 1964-65, 1966-67, 1968-69 and 1970-71. Although it increased in 1967-68 and 1969-70, the amounts remained well below the recent highest level reached in 1965-66. In other words, the annual collection of small savings did not grow after 1965-66 which might have exerted some adverse impacts upon the rate of investment.

Next we may mention the increasing frequency and extent of labour-disputes which took place during this period and hampered production through lock-outs, closure, strikes, etc. The cases of closure from lock-out etc., increased from 167 in 1963 to 215 in 1964, 228 in 1965, 438 in 1967, 417 in 1968 and 894 in 1969. Similarly, the year-wise account of man-days lost swelled remarkably over the period 1963-68 from 769.9 thousand in 1963 to 1556.2, in 1964, 1362.6 in 1965, 2754.4 in 1966, 6118.8 in 1967 and 6722.5 in 1968.

As a necessary outcome, this growing dimension of labour-disputes might have caused an adverse impact upon the labour-productivity which aggravated the problem of recession. Naturally, West Bengal's labour productivity in engineering activities fell from Rs. 5494 in 1964 to Rs. 5211, 4460, 4461 and 4425 in 1965, '66, '67 and 1968 respectively although there was considerable growth of labour-productivity in Maharastra and Tamil Nadu. In Maharastra it increased from Rs. 5425 in 1963 to Rs. 6629 in 1968 and in Tamil Nadu the expansion was from Rs. 4264 in 1963 to Rs. 5281 in 1968.

In the face of all these unfavourable developments the pace of growth of industries in West Bengal was slackened during the period 1963-69. The net increase in the number of registered factories in West Bengal was 175, 126 and 18 in 1966, 1967 and 1968 respectively against the corresponding annual growth of 445, 248 and 364 in 1965, '64 and '63 respectively. In 1968 306 factories had to be closed against 133 on an average during 1963-65.

The comparatively slow rate of industrial expansion may also be attributed to some extent to the discriminating policy of the Central

Government regarding the distribution of industrial licences and allocation of industrial raw materials. Once Mr. B. M. Birla held that the Government of India was mainly responsible for the lack of growth of industries in West Bengal. The Government did not give adequate licences to West Bengal on the plea that the State was already industrially developed. But the same yard-stick was never applied to Maharastra although at the dawn of independence both West Bengal and Maharastra were at the same footing of development. During the period 1956-67, Maharastra was given 2741 licences while West Bengal received not more than 1649. Between 1956 and '66, 27.37% of the total industrial licences issued were allotted to Maharastra against West Bengal's share of only 16.46%. Apart from this discriminating treatment, there was also a sharp fall in the volume of licences sanctioned to West Bengal over 1964-69. The total number of industrial licences issued to West Bengal was 156 and 143 in 1962 and 1963 respectively. But thereafter it began to decline rapidly and fell to 88 in 1964, 64 in 1965, 42 in 1966, 48 in 1967, 34 in 1968 and 62 in 1969. The number of licences issued to new undertakings declined gradually from 45 in 1962 to the miserable level of 2 in 1966, 9 in 1967, 5 in 1968 and 6 in 1969. Similarly, the number of licences for new articles began to fall from 1964 and became as low as 11 in 1966 against 44 in 1963. The annual number of licences issued for substantial expansion of the existing units also went down from 80 in 1962 to 68, 52, 34, 29, 18, 15 and 44 over the period 1963-69. Between 1965 and '69 West Bengal was given 250 licences in total against Maharastra's 489. We should also take note of a common allegation that even the allotted licences were not properly utilised by the industrialists in order to nurture their vested interests.

Another alarming problem was an acute shortage of raw materials faced by both large and small industries. Though the scarcity was real and nation-wide, in the case of West Bengal it was aggravated by the discriminatory allocation of scarce raw materials for which the responsibility largely lies with the Central Government. For instance, we may refer to some statisties regarding the distribution of certain raw materials in small industries over 1962-63 and 1963-64. So for as copper is concerned, Maharastra was allotted 28.63% of its requirements, Gujrat 72.91% and West Bengal 9.22%. The distribution of zink met 23.54% of the requirements of Maharastra, 37.83% of Gujrat against only 7.20% in the case of West Bengal. Likewise, West Bengal received only 2.25% of her demand for lead although Gujrat was given 23%. Lastly, in the distribution of nickle West Bengal had to be satisfied with only 0.54% of her requirements while Maharastra got 6.50% and Gujrat received 40% of their respective demands.

The volume of coal distributed to iron and steel, jute mills, cotton mills and engineering industries fell drastically in the years between 1966-68 as compared to the level of consumption reached previously, particularly during 1963 and '65. The supply of coal to engineering industries went down from 17 million tons in 1964 to only 4 M.T. in 1966 and 1 M.T. in 1967 and 1968. The shortage of power was another inhibiting factor. Although the supply of electricity for industrial consumption recorded increase in West Bengal over 1959-69, it grew at a staggering rate during 1965-66 to 1969-70. In fact, the supply of electricity for industrial purpose rose by 17% on an average during 1965-66 to 1969-70 against 40% on an average during 1960-61 to 1964-65. In contrast, the industrial consumption of power in Maharastra increased by 59% and 49% during 1960-61 to 1964-65 and 1965-66 to 1969-70 respectively.

Another possible cause for the recession was perhaps the relatively low agricultural productivity in West Bengal as compared to the performance of other States. The compound growth rate in agriculture over 1952-53—1964-65 was 2.61% in Punjab, 4.09% in Gujrat, 3.04% in Tamil Nadu 2.45% in Maharastra and only 1.34% in West Bengal, At the end of 1968-69, only 1197 pumps were energised (irrigation), in West Bengal against 124961 in Maharastra, 410119 in Tamil Nadu, 42088 in Gujrat and 59112 in Punjab. The corresponding figures at the end of the 4th plan were 3607 in West Bengal, 224961 in Maharastra, 562284 in Tamil Nadu, 57088 in Gujrat and 81612 in Punjab.

In conclusion, we may observe that there were general factors which brought about the industrial recession in West Bengal. Important among them were lack of effective demand, under-utilisation of existing productive capacity, fall in the rate of investment, slow growth in small savings, labour-unrest and low labour-productivity, shortage of industrial raw materials, unsatisfactory agricultural progress and the discriminating attitude of the Central Government. We should also blame the concerned Departments of the West Bengal Government, whose callousness, lack of initiative, zeal, perception and inefficiency were no less responsible. It is difficult to judge the relative importance of these forces but it is true that all of them acted directly or indirectly behind the recession and served as both cause and effect,

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Pledge Renewed

In his Republic Day eve message to the nation the President of India addressed, "The spiralling of prices and the shortage of food and other essential commodities have caused serious hardship to our common people." The great economic crisis of the nation is thus presidentially confirmed. The confirmed crisis seeks confirmation that it is the result of the confirmed total crisis in frontier economy, i.e. production of inputs, and, in the operational side, utilization of whatever inputs are available. The excuses of the frontal failure are many. People have by now grown much wiser and rejected them as a whole. To them the crisis is the derivation of the present social order. The order as such should be replaced by a new social order, no matter if violence is needed. The President of India as the "first servant of the nation" has glorified the ruling party's conceptual new social order. But the irony is that the people want a new social order resisting at the same time the "conceptual new social order" of the ruling party, which, to the extent it has been unfolded, is unscientific, and carries no promise for the present nor for the future. However it bears abuses. Abuses for the oppositions and for the select developed countries. It also bears philosophy of internationalization of the causes of crisis and shifting the responsibility of feeding of one's own people to external grants and aid.

Abuses and philosophy of shifting of responsibility are no answer to economic problems. Economy moves by acceleration of the apparatus of saving and investment. This is the universal economic law. It is a myth to say of self-sustained or self-propelled economy. Behind the mechanical driving force of the economic apparatus there is and must be a human driving force which will drive it for some normative achievements. This driving force is the collective and disciplined will, effort and strength of the people. It works for the people associated with it, for others, for now, for future, and for future generations. The dominating "invisible hand" in the capitalist economy is none but the disciplined self-conscious man, whose "self" identifies with the "general" or collective consciousness.

In the socialist economy the "invisible hand" is the hand of the state whose power is "total" and "unitarian", usurped as such. In it the state's will embodies the will of both individual and collective. No will can be above nor below the state's will (in dictatorship however the state's will is above all). Evidently, in both the systems the economic apparatus is driven by undivided people, and both assure in their respective paths the growth and future progress. The differences are nonetheless weighty. In a socialist state the identity between the state and the people is shady whereas it is substantial in the case of a capitalist state. And again whereas in the former the people have to accept what the state gives, in the latter the state has to accept what the minority gives to it. It is a fallacy, as has been proved by postwar Federal Republic of Germany and Japan, that a planned economy is the shortest route to growth. It is also proved that the command-based socialist state is not only founded on the destruction of liberalism but also it has no force to recreate a new one. But liberalism is humanism. It is also the political foundation of capitalism. The humane character of liberalism has however degenerated into exploitation in an acquisitive society ruled by minority largely in the interest of the minority.

India has gone the way of planned economy for a quick settlement of socialism by rapid expansion of public sector from all sides. The foundation of this operation and the ultimate sustaining force of her socialism are the Western liberalism. Seen separately, planned economy preconditions a much greater closeness and cooperation of disciplined people, i.e. very strong sense of nationalism inspired by the feeling of creation of a new social order, no matter if initially the inspiration is the thrust of a revolutionary person or theory. We have failed to fulfil this precondition. People here are not close, cooperative and disciplined ; even innocent of any sense of nationalism. Liberalism is a revolutionary force but it becomes reactionary if prevailed by the affluent and dominating minority of a society. In our country liberalism is meaningful to the haves and a torture to the have-nots. In totality, planned economy of public sector variety of socialism and Western liberalism are contradictions. In rejecting the communists' assertion that socialism (communism) is the alternative of capitalism - a higher synthesis—the leaders have struck out a "higher synthesis" which is nothing but a bundle of contradictions. And we have been made to live in contradictions.

This is because of the leaders' blind copying of the good points of the capitalist and socialist systems to evolve a new system. Planned economy is a good point; for it is employment-oriented and reduces economic fluctuations and is an essential tool for promoting and settling modern socialism. Western liberalism is a good point for it gives liberty to individuals for owning and expressing themselves freely and fully. The good points can meet if both are purified and made national in content.

For synthesis purifications of the good points can be possible only by stripping off their abstract values. That means they should be adapted by our long cultural and socio-political heritage. India should be taken as India first and not as any of the Western countries or a country resting in the communist ford. The synthesis will then be of the rich and dynamic values of our past and those of other rival systems of the rest of the world. Once found this will be the revolutionary theory for socio-economic evolution for India and further this will provide the model for universal adoption. At the time when the world has inclined to reject both capitalism and communism a true synthesis of the rival systems purified by national heritage will be most welcome. A characteristic feature of this synthesis will be that it will be a synthesis of national syntheses—the most coveted one—the unity in diversity.

The Economic Affairs on the eve of its 20th year of publication solemnly renews its pledge of striving hard to evolve a new social order for India and a model social order for universal acceptance.

Oil Prices and Terms of Trade

The distributing impact of the rise in oil prices in 1974 must be considered in the light of the extraordinary boom in commodity prices. Recent economic trends have sharply aggravated existing inequalities among developing countries. Some, and not only the oil producers, have been able to derive substantial net gains. Other countries find themselves net losers, including some of the largest and poorest, with poor export prospects, low foreign exchange reserves, heavy indebtedness and massive increases in import burdens owing to higher prices and increased food import requirements.

For developing countries, as a whole, 1973 was a very successful export year, with the total value of their exports to OECD countries rising by nearly 50 per cent over 1972, following a 17 per cent gain in the previous year. Higher export volume accounted for about 60 per cent of the gain in 1973. The average prices of developing countries' imports from the OECD area rose by about 19 per cent in 1973. Price increases were much more substantial for countries heavily dependent on imports of food and fertilizers. Countries such as Bangladesh, Egypt, India, Korea, and Pakistan, heavy net importers of cereals, faced prices which had tripled between 1972 and the end of 1973. In 1973 alone, higher cereal prices added an estimated $5 billion to the developing countries' import bill. The burden was especially heavy for countries importing rice, whose price increased fourfold between 1972 and the end of 1973. With import prices for manufactured goods rising at unprecedented rates as well, the total cost of the developing countries' imports from OECD members rose by about $10 billion over the period.

Since the increase in import prices fell behind higher average export prices of non-oil exporting developing countries, their average terms of trade improved by about 9 per cent in 1973 compared with 1972. However, these gains represented no improvement over the levels of the terms of trade in 1969. During 1973 the total reserves of non-oil producing developing countries increased by $7.4 billion, or 28 per

(Continued on page 80)

The "Energy Crisis"— Reality or Hoax ?

Koilpillai J. Charles*

I The Facts and the Fantasies

Today there are more than 3.6 billion people in our world. They consume annually 1,500 million tons of food, 15 million tons of fibres, 1,200 million tons of forest products, 600 million tons of metals, nearly 600 million tons of cement, and immense amount of a variety of other products. To meet the needs of the world's population, much work has to be done. The total energy effectively used amounts to 3.4 billion TCE (tons coal equivalent). To obtain this energy we need to generate nearly 8 billion TCE, because of losses in processing, distribution and utilization.

The contributions of different types of energy in the total energy supply are shown in Table I.

Table I : Sources of Energy

Energy Source	Billion TCE	% of Total
Oil	3.4	43
Coal and Lignite	2.4	30
Natural gas	1.4	18
Non-commercial fuels	0.6	7
Hydro electricity	0.15	2
Nuclear fuels	0.03	—
Total	7.98	100

There are, of course, substantial differences in sources of energy from region to region, but more importantly there are wide variations in per capita consumption of energy from country to country and region to region. In the most highly developed countries, consumption averages 11 TCE per capita, as against 2.5 in the more moderately developed countries, and only 0.6 TCE per capita in the developing world.

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The U.S.S.R. has 7 per cent of the world's population, consumes 18 per cent of the energy produced, and owns 55 per cent of the world's known oil, gas, coal and hydro-electric energy resources. On the other hand, the United States has only 6 per cent of the world's population and yet consumes fully one-third of the world's energy output.

Energy resources are distributed very unevenly over the globe. The surpluses and deficits of energy in different regions have given rise to a complex network of trade. Nearly one-third of the world's energy is involved in this trade, 90 per cent of which is in the form of crude oil and products, 8 per cent in solid fuels, and 2 per cent in natural gas. Annually, international movements of oil alone are of the order of 1.5 billion tons and involve practically every country in the world: 142 countries import significant proportions of their requirements; 18 export most of their output

By the turn of this century a doubling of world population is expected, and since per capita consumption of energy rises with rising income, this is likely to result in a five-fold increase in world energy requirements. This is a tremendous increase in demand, and available evidence indicates this existing energy resources will be inadequate to meet these needs.

Table 11 provides data on proved oil resources of the major producers of oil, and the number of years they are likely to last at current rates of consumption.

There is no doubt that by the turn of the century the world will be faced with a serious shortage of oil. But in this grim longterm prospect oil shares with most of the non-renewable resources of the world. Because of man's reckless orgy of consumption and senseless destruction of his natural resources, it has been obvious to thinking men the world over that man is on a collision course with his resource. From a long term view, there is no doubt that a serious resource crisis is looming on the horizon, and this calls for far-reaching and fundamental reforms in man's economic and social life.

However, the term "energy crisis" is not being used in the long-term sense, and certainly there is no need to single out energy from all other non-renewable resources for this purpose. The term is being used today to refer to a serious shortage of energy resources in relation to current demand. But such a shortage in fact does not exist, and for many years to come world supply of oll will exceed its demand.

Table II : World Oil Production and Reserves
(in billions of barrels)

Region	1972 Production	Oil Reserves	How long will they last
Western Europe	0.1	10.3	
Africa	0.5	15.3 (Nigeria : 12.4)	20 years
South East Asia	0.5	14.0 (Indonesia : 10.7)	27 years
South America	1.6	25.5 (Venezuela : 13.9)	25 years
North America	4.2	47.2 (U. S. : 36.8* Canada : 10.0†)	11 years
Socialist Countries	3.3	100.0 (U.S.S.R. : 75.0 China : 20.0)	26 years
West Asia and North Africa	80.0	390.0 (Saudi Arabia : 146.0 Iran : 72.9 Kuwait : 65.0 Algeria : 47.0 Libya : 30.4 Iraq : 29.0 Abudhabi : 20.8 Qatar : 7.0 Oman : 5.0)	48 years

* Includes 11 million barrels ALASKA reserves but not COLORADO SHALE
† Includes ALBERTA TAR SANDS
Source : Compiled from Oil and Gas Journal and other published data.

If the supply of eggs exceeds the demand for them, then, other things remaining the same, the price of eggs would fall. The fact that eggs may become extinct in thirty-five years should not be expected to reverse this downward trend of their price. If the price of eggs, in fact, rises, it can only be due to the creation of an artificial scarcity by vested egg interests. While oil is not as perishable as eggs, there are storage problems and expenses, and, in the absence of international production agreements and control, there are risks of losing the market to competing or rival oil interests.

Oil exploration around the globe, moreover, is turning up ever new discoveries of oil. Undue restriction of supply is also unattractive due to the prospects of cheap non-petroleum sources of energy being developed,

In the light of this analysis, two inferences seem inescapable. (1) The so-called energy crisis is an elaborate hoax perpetrated on a gullible public by the major oil interests. (2) The diversity of economic and political interests that surround world oil preclude the possibility of these artificially high prices being maintained indefinitely.

The price before the most recent Arab-Israel war was about $3.01 a barrel. (A barrel=42 U.S. gallons or 35 imperial gallons.) The current price is $11.65. This price flare can be maintained only as the facts begin to assert themselves. The cabal that controls the scare knows this, and so the question to ask is what the vested interests hope to accomplish by this hoax.

II The Exxon-Nixon Axis

President Eisenhower, at the end of his term of office warned the the country of the dangers of the military industrial complex. But in so doing, he gave the impression that the government itself was somehow insulated from the forces generated by this military-industrial complex. The truth is, there is at work in the United States today an alliance between the government and this very millitary-industrial complex which is daily undermining the safeguards and protective influence of the competitive free market and the democratic institutions of the country. This government-military-industrial complex in its contemporary phase may be termed the Exxon-Nixon axis. The alliance between the political and economic forces represented by the Exxon-Nixon axis has been largely responsible for the 'oil scare' with very definite purposes in mind.

We may now turn to a consideration of the benefits the oil interests and their faithful government allies stand to gain by the so-called energy crisis.

III The Political-economy of oil

(1) The multinational oil companies are direct beneficiaries of the oil scare. In fact, the Wall Steet Journal, that tireless champion of the capitalist class, let the cat out of the bag as early as August 14, 1973 when it observed, "the energy crisis may be the best thing that happened to the oil and gas business in a long time." The record

profits made by the industry in 1973 show that the American Stock Market Journal exaggerating.

As can be seen from Table III, the ten largest U.S. oil companies have registered record profits during 1973.

Table III : U.S. Big Oil Company Profits

Company	1973 Profits (in million of $)	% increase over 1972
Exxon	2,440	59.5
Texaco	1,292	45.1
Standard of Calif.	844	54.2
Mobil	843	46.8
Gulf	*570	60.0
Standard oil (Ind.)	511	36.4
Shell	333	27.7
Atlantic Richfield	270	38.4
Phillips	230	55.3

* First nine months. Source : Company reports.

(2) The oil-scare makes it easy for the oil industry to get massive federal subsidies for developing non-petroleum sources of energy-research into shale-oil conversion, strip-mining, gas deposit discovery, atomic fission and the like. The oil industry, of course, has investment positions in all the non-petroleum sources of energy. Twenty-five top oil corporations in the United States account for 84 per cent of oil holdings, 72 per cent of gas, 50 per cent of coal, 80 per cent of atomic energy and 60 per cent of electricity. It is only in recent years the oil companies have been acquiring control over non-petroleum sources of energy. In the past, presidential impoundment had successfully prevented the application of appropriated funds for non-oil and non-nuclear modes of generating power. But now Congress has moved to authorize nearly $ 30 billion in energy development funds for the next ten years. The oil companies, of course, will be the beneficiaries of these funds, and they will time everything so well that they will "discover" non-petroleum sources of energy just after they have exhusted their oil reserves.

(3) The daily demand for oil in the U.S. is around 17 million barrels. It was first claimed by Nixon that there was a daily shortfall in supply of 3.7 million barrels. Simon, the energy czar, after more careful examination of the facts, reduced the figure to 2.5 million.

As can be seen from Table IV, energy consumption in the United States is abnormally high in relation even to other developed countries. Forty-six per cent of this energy comes from petroleum ; and automobile gasoline consumes 39 per cent of this petroleum, while industrial and commercial uses account for only 18 per cent. Even if there were a shortage of oil, it is easy to see that with a little restraint used on the demand side, a new balance could be established between supply and demand with highly beneficial results—less polution, less congestion and more economical use of energy. But the facts show there does not, in fact, appear to be a shortage of supply. This was confirmed in January, 1974 by the government's own Bureau of Mines which announced not only that supply was well ahead to demand, but that the oil industry had near-record stock-piles of all petroleum products sitting unused.

Table IV Energy use per capita per day (in thousands of British thermal units)

U. S.	Canada	U.K.	U.S.S.R.	Japan	Brazil	India
850	680	430	350	200	184	37

Source : Scientific American and Oil and Gas Journal.

Sometimes it is claimed that the crisis does not pertain to a shortage of crude oil, but to a shortage of U.S. refinery capacity which is alleged to be only 14 million barrels a day. What the oil industry hoped to accomplish by this myth is to force a withdrawal of the tough new anti-pollution requirements and to force other tax concessions. The fact is that the major oil companies have already built new refineries off the Atlantic coast—in the Carribean, Bahamas and in Curacao—whose capacities add up to three million barrels a day. But, of course, the hoggish consumption of energy in North America, largely encouraged and engineered by the oil interests, will require additional construction of refineries, and the illusion of crisis enables the oil industry to extract further concessions from the grovernment, and to choke public demands for clean air and healthier environment.

(4) It has suited the American government and the oil industry to create the impression that the so-called energy crisis is the work of the cunning and greedy Arabs. This arouses anti-Arab sentiments in the United States, and secures public backing for American military adventures in the Middle East. It was recently reported that U.S. marines are training in Utah and Nevada for desert warfare, and Kissinger and Fulbright hinted darkly of the possibility of U.S. military take-over of the Arab oil fields.

Actually, the United States has never been in much need of Arab oil, and for nearly fourteen years the government has been imposing quotas in an effort to keep out middle-eastern oil. Even after the relaxation of these controls, the U.S. depended on middle-eastern oil for only 6 per cent of its oil needs.

But the truth is the Arabs do not have much control over their own oil. Saudi Arabia and Iran between them account for the bulk of middle-eastern oil, but the oil reserves in both countries have been developed and explored by two combinations of giant Western oil companies, the combination in Iran being known as the "Consortium" and the one in Saudi Arabia as "Aramco". The latter is owned by four great American based companies—Exxon, Standard of California, Texaco, Mobil—and the Saudi Arabian government. The American companies also participate in the 'Consortium' along with British Petroleum and Royal Dutch Shell, and, of course, the Iranian government. The oil companies have been the major beneficiaries of the oil price increase. For example, between January, 1970 and October, 1972, the tax paid cost of a barrel of 34 degree Arabian light was claimed to have risen from $1.03 to $1.56. The competitive market price rose from $1.24 to $1.85. The Saudi Arabian government's take thus increased by 53 cents. But, because the market price went up by 61 cents, oil company profits rose by 8 cents, or about 40 per cent per barrel.

The government-military-industrial complex in the United States has arranged everything neatly so that oil companies can deduct from the taxes they owe the U.S. government any taxes they pay a foreign government. In the event of nationalization without adequate compensation, the oil companies will be reimbursed by Washington. So the oil companies have little to lose. Moreover, they are in oil not for love, but for money and when there is no more money in oil they will move with ease to non petroleum sources of energy in which, as noted earlier, they have in recent years increased their investment positions. But this is a long term prospect. At the present time, they never had it so good. They are holding most of the cards and they are calling most of the shots. Even if the oil producing nations completely nationalized their oil, they would still depend on the big American oil companies who own 75 per cent of the world's refineries.

(5) It was noted earlier that America's dependence on Middle Eastern oil is a mere 6 per cent. On the other hand, both Europe and Japan, without any domestic oil resources, have depended on

middle-eastern oil for the bulk of their oil needs. As long as middle eastern oil was available to Europe and Japan at the old price of around $2.00 a barrel, these nations had an advantage over the U.S., whose domestic crude oil it produces for itself at nearly twice this cost. Now the tables have been turned, and American commercial interests have a competitive edge over Japan and the countries of Europe. Politically, also the United States would feel that the price increase of oil is a powerful weapon with which to force countries of Europe and Japan into submission. In the light of this analysis, it would seem that it is not an accident that the Shah of Iran, a faithful U. S. ally, has played a prominent role in mobilising opinion among the producing countries in favour of the recent price increases.

(6) There is no doubt that the oil-producing countries have also made enormous gains in the recent price increases. But the multinational corporations of the world are not unduly perturbed at this ; nor is Washington, for that matter. The leaders of these countries, by and large, preside over oppressive and unjust regimes, which have done little for the welfare of their people and development of their economies. So what can they do with all their accumulated wealth ? The minority which holds power would buy for itself fleets of air-conditioned cars and other fancy gadgets and the artifacts of the developed countries. The bulk of it will go to the purchase of even more destructive and powerful armaments and military hardware. So all these gains will end up in the coffers of the multi-national corporations. When Walpole received an increase in his allowance, the madame of a bawdy house is said to have remarked to her girls "Seven hundred pounds, my dears, and all for us !"

The combined effect of population growth and rising affluence is accelerating world food demand at rates without precedent in history. At the turn of the century, the annual growth in global demand for cereals was probably about four million tons per year. By 1950 it was about 12 million tons per year. As of 1970, only 20 years later, the world demand for cereals was expanding by 30 million tons per year—the equivalent of the annual wheat crop of Canada, Australia and Argentina combined. And this increase in demand is incessant, occurring in years of good and bad weather alike. —L. R. Brown

Gas Demand for Pennsylvania's Growth, 1956—1985

Philip H. Siegel*

I. Introduction

The emergency of natural gas shortage during the past three years has received nationwide attention. The major limitation of natural gas as energy source is its availability, not its environmental impact.

The demand for gas is expected to increase significantly during the period from 1971-1990, not only because of the growth in total energy requirements, but also because of the clean nature of this fuel and its premium value in many industrial heating applications. The most recent studies[1] of the Future Requirements Committee pointed out that the requirements for gas in the lower 48 States are projected to grow from 22.6 trillion cubic feet in 1970 to 39.8 trillion cubic feet in 1985, and 46.4 trillion cubic feet in 1990. To meet unprecedented demands by industrial, commercial and residential consumers, there is a critical need for new domestic supplies of natural gas, and encouragement of importation of liquefied natural gas and feedstocks for manufacture as substitute gas.

The projected total gas supply will meet projected total gas demand of 77.5% in 1975 ; 71.0% in 1980 ; 66.3% in 1985 ; and only 63.8% in 1990. This resulted severe limitations on new industrial loads, and deliveries to existing industrial customers are beginning to be curtailed.

In 1971 the State of Pennsylvania ranked sixth and twelfth in the nation in the consumption and in production of natural gas respectively. As our industry and population continue to rise we are going to need more gas.

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[1] National Gas Supply and Demand, 1971-1990, Federal Power Commission, Staff Report No. 2, Bureau of Natural Gas, Washington, DC, February 1972. p. 117.

An adequate projection of gas demands is needed to enable us to develop comprehensive and coherent energy policies ; an adequate gas supply is possible only if we develop and implement these policies.

The purpose of this paper is to review some of the significant issues within the past consumption (1956-1971) and to consider future gas requirement in Pennsylvania, 1972-1985.

The paper is divided into four parts. Part one represents introductory remarks on the past and future gas problem. Part two examines consumption and growth by totals and by its major structural components in comparison with the three trends—population, personal income, and value added by manufacture over the 1956-1971. Part three develops projected demand through 1985. Two variables are identified as being most significant : population growth and in value added by manufacturing in projection of the future demand importance.

The methodology employed is a combination of descriptive and econometric techniques. Because of the complexity of the socio-economic phenomena, extrapolation of the gas consumption trend or its projection based on the predicted growth of any of considered economic determinants gives unsatisfactory results, hence multiple regression analysis approach. Calculations are given for errors of projection. The most reliable variables, by these calculations, are population and value added by manufacture.

In Part four, we present a summary of our principal conclusions.

II Consumption of Gas and its Main Determinants in Pennsylvania, 1956-1971

To explain the mechanism of the past gas consumption, the process and tendencies of its growth and the relative changes in its major structural components we studied the trend of the past consumption of gas and its relationships with the growth of population, personal income and value added by manufacture.[2] Consumption of gas in the State increased from 1956 to 1971, about 74.1%. Using 1956=100.0 as the statistical base, its relative index in 1971 was 174.1%, with an annual average growth rate of 3.7%. Between 1956 and 1964 natural gas share of total gas consumption ranged from 94.2% to 92.1% and for the last seven years of the studied period it was about 99.8%. The residual of total gas consumption constituted the share of manufactured gas.

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[2] Data on Population, personal income, and value added by manufacture see "Past and Future Electric Energy Demand for Pennsylvania, 1956-1985" by A. E. Smigel and F. Krawiec, Wharton Quarterly, Summer 1973.

It is important to note that population increased in Pennsylvania from 1956 to 1971 about 8.26%—an annual average growth rate of 0.58%. This disparity in growth rates—the annual growth rate of gas consumption was more than 8 times greater than that of population—led to the study of other, more reliable variables.

Personal income for the same period increased approximately 55.1%. The annual average growth rate from 1956 to 1971 was 2.98%. Estimated value added by manufacture for 1971 was almost double that of 1956. The relative index in 1971 was an estimated 194.2%, with 1956=100.0 ; the annual average growth rate from 1956 to 1971 was 4.6%. Between 1956 and 1961 about 70%-75%, and from 1962 to 1971 about 80%-90% of the demand for gas had been met by out-of-State purchases, and the rest by production within the State.

The basic use pattern has not been altered significantly over the sixteen years from 1956 to 1971. The three major consumers of gas are : industrial, residential and commercial ; less significant are : public and other. The last category—"other"—includes privately owned and co-operative utilities (electric, telephone, water, sewer, railroad and motor utilities).

The residential share of total consumers between 1956 and 1970 was practically unchanged (93.6%—93.8%). In 1971 it was 93.4%. There has been a gradual decrease in the share of total consumption by the residential consumers in the studied period. It ranged from 51.1% in 1956 to 40.1% in 1971. Nevertheless their consumption has had, with some faltering, upward trend between 1956 and 1971. Their relative index for 1971 was 136.7%, with 1956=100. The average annual growth rate of residential consumption of gas in analyzed period was 2.1%.

It should be noted that the industrial share of total consumers was unchanged from 1956 to 1971, only 0.4%. There was a significant steady increase in industrial consumption gas in Pennsylvania over sixteen years between 1956 and 1971. Their use in 1971 increased about 124.4% over 1956, with the average annual growth rate of 5.4%. Industrial share of total consumption ranged from 35.7% in 1956 to 46.1% in 1971.

The third major consumer—commercial—also has had upward trend of the gas consumption between 1956 and 1971. Commercial consumption in 1971 increased about 126.9% over 1956 ;—an average annual growth rate of 5.6%. With the relatively minimal changes in their share of total consumers (5.7%-6.1%) they use 9.5% of total gas consumed in 1956 and 12.4% in 1971. Thus commercial use is not far behind residential and industrial use in future demand importance.

The share of the public (local, state and federal government) users was unchanged, only 0.1% from 1956 to 1971. In the same studied period their consumption of gas in 1971 was over four times greater than that of 1956. The relative index in 1971 was as estimated 427.9%, with 1956=100.0 ; the annual average growth rate was of 10.2%.

The last category termed "other" has had the constant share of total number of gas consumers over sixteen years from 1956 to 1971. It was 0.03%. Other consumption ranged from 3.2% to 4.4% of total was between 1956 and 1959. For 1960 it was 0.4%, from 1961 to 1971 the share of other consumption was only 0.1%.

The described process and tendencies of the past consumption of gas and its major structural components in comparison with the three basic trends—population, personal income and value added by manufacture led us to believe that the rapid increase in the studied consumption will be continued for the period to 1985.

This qualitative judgement as to future gas demand would not satisfy the planners and the policy makers. The result of the foregoing descriptive analysis cannot be considered as the sole basis for the formulation of these policies. It would be helpful if the results of the descriptive study could be complemented with the result of an econometric investigation of the complexities and inter-dependencies between the consumption of gas and its main determinants.

III. Projection of Gas Demand for Pennsylvania, 1972-1985

A relatively correct projection of gas demand for the period to 1985 must be based on the estimated results of our descriptive approach and the application of econometric methods.

The descriptive analysis is superior to formal mathematical methods of research, because of the complex character of socio-economic phenomena and processes. The analysis, in addition to explaining the machanism, must enable us to predict the behavior of one of the related phenomena when the behavior of the others is known. Usually this is impossible when the phenomena studied are not quantifiable and the relationships among them cannot be presented in functional form. There is a gloss inter-relation between the qualitative and quantitative aspects of economic phenomena. Therefore a proper econometric projection cannot ignore the importance of the quantitative method to the description and analysis of phenomena.

In the first part of our analysis three independent variables X_{1T}, X_{2T}, and X_{3T} were studied along with the independent variable Y_T. They represent the following :

Y_T —Total gas consumption in Pennsylvania, 1956-1971.

X_{1T} —Population of Pennsylvania, 1956-1971,

X_{2T} —Personal income (in millions of constant dollars, 1958=100.0) in Pennsylvania, 1956-1971.

X_{3T} —Value added by manufacture in Pennsylvania, 1956-1971.

The numerical estimates of coefficients of simple correlation (R) show (See Table 1) that all three of the independent variables are significantly associated with the dependent variable at the over 0.96 confidence level. These conclusions also follow from logic and economic considerations. The total gas consumption is determined by residential, industrial, commercial and public activities. These are relatively quantifiable and reflect the complexities and inter-dependencies between them and total gas consumption.

Table 1
Matrix of Coefficients of Simple Correlation

	X_{1T}	X_{2T}	X_{3T}	Y_T
X_{1T}	—	0.933	0.927	0.967
X_{2T}		—	0.998	0.972
X_{3T}			—	0.964
Y_T				

The results also indicate that, of the variables considered, the most imporatant factor influencing the total gas consumption is the personal income. It is because personal income is an aggregated quantitative expression of the industrial, commercial, public and, to some extent, residential activities. For that reason personal income has to be considered as the one of the most important factors determining future gas demand. Second in importance is the population.

Population growth is a significant factor in determining the ultimate size of energy market. Still population as quantitative expression of the residential gas use represents only about 45% of the total gas consumption.

Almost with the same importance has to be considered value added by manufacture, which describes industrial activities. Industrial consumers also use about 45% of the total gas consumption.

The partial correlation coefficients show a relatively very high inter-correlation or multicollinearity between our three examined independent variables. Inter-correlation is not necessarily a problem unless it is high relative to the overall degree of multiple correlation among all variables simultaneously.

To find quantitative expression of the studied random variables the multiple linear regression equation was considered

$$a_0 + a_1 X_{1T} + a_2 X_{2T} + a_3 X_{3T} + u_T \qquad (1)$$

where a_0, a_1, a_2, a_3—regression parameters of the sample

u_T —random component

$T = 1, 2, \ldots\ldots, n.$

On the basis of the empirical data we proceeded to estimate its parameters by application of the ordinary least square method with sample period 1955-1971.

The results of parameters estimation are :

$$Y_T = -154{,}351.35 + 16.32X_{1T} + 7.37X_{2T} + 21.22X_{3T} + U_T \qquad (2)$$

$$(61{,}337.33)\ (98.98)\quad (20.99)\quad (20.99)$$

The standard errors of numerical estimates of parameters :

a_0, a_1, a_2, and a_3 (given in parentheses) show this attempt to fit the multple linear regression equation (1) to our empirical observations did not give satisfactory results.

The failure of this equation is due to the very high level of inter-correlation between personal income (X_{2T}) and value added by manufacture (X_{3T}). The coefficients of simple correlation is 0.998.

So among the three possible determinats of the total gas consumption—population, personal income, and value added by manufacture—personal income factor was dismissed.

The new equation and the estimates of its parameters is the following :

$$Y_T = -1{,}795{,}371.27 + 189.12X_{1T} + 13.24X_{3T} + U_T \qquad (3)$$

$$(113{,}259.86) \quad (10.89) \qquad (0.82)$$

$R^2 = 0.98$ $\qquad S_{(u)} = 16{,}809.24$ mill. of cubic feet.

The statistical picture which emerges shows that this relationship suggests that both population and value added by manufacture jointly determine the level of elastic gas consumption. As we already pointed out they are quantitative expressions of the residential and industrial activities, which consumption of gas. in the studied period, was almost 90.0% of its total use.

The standard deviation of the residual component ($S_{(u)}$) compared with an annual average total gas use in Pennsylvania, 1956-1970 ($\bar{Y}$=582,130.0 milllons cubic feet) and the standard errors of regression parameters a_0, a_1, and a_3 show that this equation has slope coefficients that are estimated within a fairly narrow band of confidence. The coefficient of multiple determination (R^2), listed with considered equation, shows that it has a very close fit to actual sample data.

We also regress total gas consumption on personal income, we apply straight line equation, we estimate

$$Y_T = -66{,}098.20 + 22.59X_{2T} + U_T$$

$$(34{,}472.68) \quad (1.19)$$

$R = 0.96$ $\qquad S_{(u)} = 21{,}682.13$ mill. of cubic fit

The coefficient of determination is slightly lower and standard deviation of the residual component is much higher than those for the first equation. Also the standard errors of its parameters estimates are less statistically significant, by conventional criteria. Nevertheless it gives a close enough approximation of the actual gas use in Pennsylvania over the past 16 years from 1956 to 1971.

Given same reasonable projections of numerical values for the annual population, personal income and value added by manufacture for Pennsylvania for 1975, 1980 and 1985, and applying the regression equations, we have made projections of gas requirement for the State up to 1985.

Table 2 is a projection of the total gas demand for Pennsylvania up to 1985.

Both projections of gas demand for Pennsylvania up to 1985 are relatively close. The projections based on forecast growth of personal income is about 12.4% higher than estimated demand based on predicted growth of population and value added by manufacture.

From the point of view of the degree of accuracy, the first projection seems to be better. However, we would suggest also for developing appropriate gas policies of the State of Pennsylvania for the next 15 years. This is because the studied economic factors express, in an aggregated form, all activities of the entire State economy.

In this study we have not considered the projection of gas demand based on the extrapolation of the trend of total gas consumption in Pennsylvania, 1956-1971. There is common agreement that a "trend smoothed-out time series curve" can be used only as a description of a time series or as a process of learning. It cannot constitute the basis for a projection concerning the development of a stochastic process in the future. It is mainly indicative and must be supplemented with a deeper analysis of the main factors at work in the development of past trends.

Table 2

Gas Requirements for Pennsylvania, 1970, 1975, 1980 and 1985*

Item	Real	Projection		
	1970	1975	1980	1985
Gas Demand :				
—as a projection based on the forecast growth of population and value added by manufacture of Pennsylvania, 1975, 1980, 1985	738,926.03	856,271.00	1,060,340.00	1,331,140.00
—in mill. of cubic feet		(67,199 08)	(75,136.50)	(81,838.55)
—relative index (in %)	100.0	115.9	143.6	180.2
—as a prediction based on the projected growth of personal income (on constant dollars, 1958 =100.0) in PA, 1975, 1980, 1985	738,926.00	952,530.00	1,194,311.00	1,423,193.00
—in mill. of cubic feet		(112,322.65	(92,850.28)	(45,313.86)
—relative index (in %)	100.0	128.9	161.6	192.6

* In parentheses the associated variations of projections are given.

IV. Conclusions

We have had a twofold objective in this study. On the one hand, we wanted to explain the mechanism of the past gas consumption, the process and tendencies of its growth and the relative changes in its major structural components with relation to residential, industrial, commercial and public activities. Having in mind that the results of descriptive analysis enable us only to make qualitative judgements as to future gas requirement we set as our second objective the quantitative investigation of the studied economic phenomena.

As to the second objective, we have found that it is feasible to apply the multiple linear and straight line regression equations and describe the complexities and interdependencies between our random variables. This led us to two variants of econometric projection of our dependent variable.

According to our first set of objectives we find out the following :

1. The average annual rate of growth of total gas consumption from 1956 to 1971 was 3.7%.

2. The use of gas by *industry* is the largest demand. Its consumption with average annual rate of growth 5.4%, has been increased about 124.4%. In 1971 0.4% of industrial consumers used 46.1% of the total gas consumption in the State.

3. In 1971 the residential use of gas was second to industrial. Its annual consumption with average annual rate of growth 2.1%, has increased about 36.7% since 1956. Its share of the total consumption of gas has dropped from 51.1% in 1956 to 40.1% in 1971.

4. The commercial use is not far behind residential use in future demand importance. In 1971 it was about 126.9% higher than it was in 1956. Its average annual growth rate was 5.6%.

5. Increase in public and government use is also significant in future demand importance. Their gas consumption was much over four times greater than that of 1956. The relative index in 1971 was an estimated 427.9%, with 1956=100.0 ; the annual average growth rate of 10.2%.

6. The share of 'OTHER" consumers of total gas use is, from projection of the total gas demand point of view, insignificant.

7. The rate of gas consumption in the State over the past 16 years from 1956 to 1971 has increased 8 times faster than population. This led us to the study of other, more reliable variables.

8. Personal income has increased about 55.1% during the studied period. The average annual rate of growth was 3.0%.

9. Estimated value added by manufacture for 1971 was almost double that of 1956 ; the average annual growth rate was 4.6%.

Our second set of objectives led us to further conclusions.

From logic and economic considerations, the demand for gas for Pennsylvania for the next 15 years may be determined from industrial, residential, commercial and public activities. These are relatively quantifiable and reflect the complexities and interdependencies between them and total gas consumption.

The estimates of coefficients of simple correlation between total gas use and our three independent variables have indicated a very high degree or relationship at the over 0.96 confidence level.

Our attempt to regress total gas consumption on population, personal income, and value added by manufacture via the applied multiple linear regression equation does not yield satisfactory results. This is because of a very high multicollinearity between personal income and value added by manufacture ($r = 0.998$). Therefore, personal income factor was dismissed from further investigation.

The numerical estimates of regression parameters and their standard errors have proved that the two new developed equations give close approximations of the actual gas use between 1956 and 1971. From degree of accuracy point of view the equation which describes interdependence between the total gas consumption and population and value added by manufacture is preferable. Its coefficient of determination is slightly higher and standard deviation of the residual component is much lower.

The obtained two projections by using joint input values of X_{1T} and X_3, and separate value of X_{2T} for 1975, 1980, and 1985 indicate that the State of Pennsylvania in 1985 would require about 90% more gas for industrial, residential, commercial, and public activities than it did in 1970. From the point of view of the degree of accuracy, the first projection seems to be more important. However we should suggest both for developing appropriate gas policies of the State for the next 15 years. It is because the studied economic factors express, in an aggregated form, all activities of the entire State economy.

Economics of Wheat Production

K. Sain*

Principal methods for determining worthwhileness of a farm project and the extent of investment in it are : (1) Farm Planning and Budgeting—that project/plan should be accepted which gives us the highest return per unit of cost, involves experimentation with possible alternative plans until the most suitable one is found out ; (2) Marginal analysis of input-output relationships—investment in any line of production is justified until extra return per unit of extra cost in this line equals that in possible alternative ventures ; (3) Linear Programming—a systematic method for determining mathematically the most desirable course of action, its reliability depending upon the soundness of basic data and the applicability of its basic assumptions to the actual problems awaiting optimum solution ; (4) Cost/Benefit Appraisal of Farm Projects—a project is justifiable if the ratio of its benefit to cost (B/C) is greater than 1 (one) and if this compares favourably with that of possible alternative projects.[1]

Worthwhileness of a project has to be studied from the standpoint of the society as well as from the standpoint of individual farm operator. From the standpoint of the society, total return is maximum if $\frac{O_x}{C_x}=\frac{O_y}{C_y}$, where O=money value of output, C=money cost, x, y are crops, such as, wheat paddy, etc , so that if $\frac{O_x}{C_x}>=<\frac{O_y}{C_y}$, increase, maintain or decrease output or x, say, wheat in relation to y. Since individual farm operator is more interested in profit, for him the rule will be : If $\frac{O_x-C_{px}}{C_{px}}>=<\frac{O_y-C_{py}}{C_{py}}$, increase, maintain or reduce x in relation to y, $O-C$ representing profit and $O-C_p$ representing farm business income. Where private interest is not automatically conducive to maximum social welfare, it may become necessary to tax and/or subsidise some of the products.

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[1] Figures in parentheses indicate references cited at the end.

In terms of marginal analysis social return is maximum when $\frac{\Delta O_x}{\Delta C^1_x}=\frac{\Delta O_y}{\Delta C^1_y}$ and individual farm business income is maximum where $\frac{\Delta(O_x-C_{px})}{\Delta C_{px}}=\frac{\Delta(O_y-C_{py})}{\Delta C_{py}}$ or, $\frac{\Delta Y_x}{\Delta C_{px}}=\frac{\Delta Y_y}{\Delta C_{py}}$, where $O-C_p=$ farm business income, Y. Here, tax and/subsidy may become necessary if individual interest clashes with social interest.[2]

The different types of production function and their applicability to farm operation reveal how quadratic function of the type $Y=a+bx+cx^2$ is more suitable to farm operation in view of predominance of natural factors in farming having for themselves less than unity elasticity of substitution and giving rise to diminishing returns to scale very soon. The farm operators should see that the equality between market price and substitution ratio for different inputs, on the one hand, and for different outputs, on the other, is obtained to maximise profit via least cost, combination of inputs, on the one hand, and optimum product combination on the other. Elasticities of production of principal farm inputs like human and bullock labour, fertilizer, seed, irrigation, etc. may be estimated by studying their regression co-efficients on per hectare yield and a Cobb-Douglas type of production function fitted to acertain relative importance of such input for enhancing yield.

II

Considering the labour intensive nature of farming in a developing economy like India and assuming for the sake of simplicity that social and private returns do not diverge very much from the ratios of profitability of different crops so that land or acreage, A, becomes the only scarce resource and symbol of cost, the rule for allocation of this scarce resource among competing crops becomes :

when $\frac{O_x}{A_x}>=<\frac{O_y}{A_y}$, expand, maintain or reduce area under x relative to that under y.

The data of average value of yield per acre for the years 1960-60 and 1951-62 for U.P. and similar data for other States and for subsequent period show how the cropping pattern in India continues to deviate from the optimum leaving enough scope for shifting of resources as between crops and, especially, from food to non-food crops :

Crops	Av. value of gross per acre yield (Rs.) in U.P.
Potato	937.00
Tobacco	806.00
Sugarcane	460.00
Groundnut	208.00
Wheat	171.00
Rapeseed	154.00
Rice	151.00
⋮	⋮
Til	55.00

The corresponding figure for wheat is Rs. 110.00 to Rs. 116.00 for Bombay showing not only intra-State variation but also inter-State variation in return per unit of cost in farming. The corresponding figures for West Bengal were Rs. 134.00 for Aus, Rs. 142.00 for Aman, and Rs. 235.00 for Jute.[3]

For the crop season 1972-73 for the State of Punjab, yield per hectare of wheat was 22.56 quintal, cost of cultivation per hectare of wheat was Rs. 1650.54, gross income/hec. of wheat was Rs. 1844.93, net income/hec. Rs. 194.39, cost per quintal of wheat was Rs. 67.10; and the output input ratio or the rate of return with reference to cost "C" (productivity ratio) was 1.12. The rate of return declined from that of 1971-72 to Rs. 1.25 owing mainly to decline in per hectare yield almost entirely due, in its turn, to the fall in operational cost of fertilizer, irrigation, and labour inputs in the background of global shortage of oil power and other inputs.[4]

For West Bengal for the same year, 1972-73, in a limited area in the district of Purulia, per hectare yield of wheat was found to be 15.28 quintal and its value Rs. 1375.20, average cost/hec. Rs. 698.62, cost/quintal Rs. 45.72 (excluding rent on leased-in land, imputed rental value of owned land, interest on crop loans and working capital, land revenue, cesses and taxes, depreciation on farm assets), and hence the rate of return : Rs. 1375.20/ Rs. 698.62, or Rs. 2.00 (approx.). For paddy, yield/hectare was found to be 10.54 quintals and Rs. 875.90, average cost/hectare Rs. 426.58, average cost/quintal Rs. 40.47 (excluding the above-mentioned cost items) and hence the rate of return : Rs. 875.90/ Rs. 426.58 or Rs.2.00 (approx.). For jute, also for the crop-year : 1972-73, yield/hectare was 11.22 quintal, its value Rs. 1432.82, average cost/ hectare Rs. 1011.55 and average cost/quintal Rs. 90.15 (exclusions : the same) and hence the output-input ratio : 1432.82/1011.55 or 7 : 5

(approx.). These data indicate the same rate of return for paddy and wheat and go to explain, at least partly, why area under, and production of wheat have been of late growing in the State.

For Punjab, again, for the crop year, 1971-72, yield/hectare of paddy was estimated to be 37.70 quintal, its value is Rs. 1986.32, average cost/hectare (Cost 'C') Rs. 2037.33, average cost/quintal Rs. 52.43, net income over cost "C"/hectare Rs. (—) 51.31 and hence rate of return or output-input ratio : 0.97. For the year 1972-73 the output-input ratio for paddy was found to be 1847.17/2059.84 or 9.90 (approx.). This shows how profitability of paddy is declining in the State. This also indicates that although net income/hectare of wheat shows a declining trend, of late, yet its cultivation is more profitable than that of paddy calling for shift of resources in favour of the former, if technically feasible.[5]

A case study conducted in a village, Nagarukara, District Nadia, West Bengal during Jan-Feb 1973 for the agricultural year 1971-72 in partial fulfilment of M. Sc. (Agriculture) Degree in Agricultural Economics of the University of Kalyani by a student shows how there is further scope for enhancing per acre yield of wheat by increasing mainly fertilizer and irrigation inputs, existing levels of their application being far below the optimum. Cobb.Douglas equation (per acre) used in production function analysis for wheat is :

$$Y = 0.4017 \quad X_1^{\underset{(0.0080)}{0.167^{**}}} \quad X_2^{\underset{0.1777)}{0.2920^{*}}} \quad X_3^{\underset{(0.0530)}{0.2690\dagger}}$$

$$n = 28 \qquad R^2 = 0.9742$$

(Figures in parentheses are standard errors)

where, Y = Yield/acre in quintal.

X_1 = Human labour days/acre.

X_2 = Fertilizer in rupees/acre.

X_3 = Irrigation number/acre.

R^2 = Co-efficient of multiple determination.

n = number of observations.

Existing level of fertilizer use per acre of Rs. 87.10 was below optimal level of use of Rs. 134.57 and existing level of irrigation (number)/acre of 2.86 was found to be below optimal level of 4.88 for the farms investigated.[6]

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* Significant at 10% level.

† Significant at 5% level.

‡ Significant at 1% level.

Notwithstanding the rise in average cost of production in recent years prices based on average cost of production are bound to be unremunerative to a large number of producers whose cost of production exceeds average cost of production. It has been estimated that cost of production of wheat at Rs. 68.47 per quiutal for the year 1971-72 for Panjab covered only 49.73% of farmers, 55.43% of the area and 60.64% of the production. Cost at 85% level of production, holding an area ranged from Rs.74.17 to Rs. 82.40 for the same year. Cost covering 100% production holding and area under wheat in Panjab increased from Rs.110.00 to Rs. 130.00 between 1967-68 and 1971-72. Considering that general price level as well as prices of farm imputs has shot up during the last two years, a price which would cover cost of production of wheat both on extensive and on intensive margins, as it should do in a shortage situation at home and abroad, and maintain the economic vitality of the peasants, would range from Rs. 148.00 to Rs.160.00 per quintal of wheat. Of course, the Government may procure limited quantity of wheat at a controlled rate below this price to distribute it among the vulnerable sections of the society. The Government in that case will have to discipline a duel market firmly, allowing the honest producer and the trader to operate in the free market but punishing the wrong doers.[7]

II

The facts that production of wheat is relatively capital-light, requires comparatively less moisture and irrigation, non-competing in areas with production of paddy, has greater nutritional value, facing increasingly greater demand under changing food habits of the people and shows better rate of return in many areas of the country encourage the belief that cultivation of wheat will continue to expand over areas and the grain will improve in quality through both technical progress and efficient price policy.

References

(1) Yang, W. Y. : Methods of farm Management investigations. Rome : F.A.O., 1965.

(2) Kushro, A. M. (ed) : Reading in Agricultural Development. Calcutta : Allied Publishers, 1968.

(3) Khushro, A. M. Studies in the Economics of Farm Management.

(4) Directorate of Economics & Statistics, Govt. of India : Report on Cost of Production of Wheat in Punjab During the 1972-73 Crop Season March, 1974 (mimeographed)
(5) Directorate of Economics & Statistics, Government of India : Report on Cost of Production of Paddy during 1971-72 and 1972-73 in respect of Selected Holdings in Punjab. September 1974 (mimeographed).
(6) A. Biswas : Productivity of Farm Resources and their allocation. 1972 (mimeographed).
(7) Johl. S. S. : Foodgrains Prices Policy in India. Ludhiana : P. A. U., 1974.
(8) Directorate of Economics & Statistics : Estimates of Area and Production of Principal Crops in India (1965-66 and 1966-67), New Delhi, 1968 (mimeographed).
(9) Govt. of West Bengal : Economic Review 1970-71. Alipore: 1971.

External Surplus and Investment of Oil Exporting Countries

(figures are both actual and estimates, and are in billion U.S. dollars not seasonally adjusted)

	1974			Total
	First Quarter	Second Quarter	Third Quarter	First nine months
Investment in :				
United States[1]	1.00	3.00	4.00	8.00
United Kingdom	0.75	1.25	2.25	4.00
Euro-Currency market	2.75	6.75	6.00	15.50
Of which : in London[2]	2.50	4.50	3.50	7.50
Others (including international organizations)	1.00	3.00	3.50	7.50
Total external surplus and investment[1] [3]	**5.50**	**14.00**	**16.00**	**35.00**
Memorandum item :				
Increase in published official reserves of OPEC countries	4.50	11.00	8.50	24.00

[1] Liquid and non-liquid.

[2] OPEC countries and Bahrein, Brunei, Dubai, and Gabon.

[3] This line is conceptually equivalent to OPEC countries', current surplus on a settlement basis. Since in principle, OECD statistics are on a transactions basis, the totals in this table would for this period be compatible with significantly larger OPEC current surpluses, the difference representing lags in the payments of oil shipments.

Data : OECD, Economic Outlook, December, 1974

Statics, Dynamics and Economics

Ranen Ghosh*

Statics in economics considers variales without reference to time. Economic variables in static analysis are timeless. Dynamics in economics considers variables with dates. Economic variables in dynamic analysis are dated. Processes of changes of economic variables are supposed and imaginary in static analysis ; for example, a demand chagess with changes in price ; but processes of changes of economic variables are taken as spanning over time in dynamic analysis ; for example, changes in demand from one period of time to another in response to changes in price over periods of time.

Planning processes involve time. The horizon of planning expands with spans of time. Economic variables are to be dated if an economic development plan is to be realistic. To make economic analysis realistic is to make it complex. The complexity of realism may be so much so that a truly realistic model of economic analysis is beyond the capacity of the tools used by an economist.

Positive economics explains the behaviour of economic variables, like capital, labour, entrepreneurship, and the intraction among these variables. This explanation bears fruits and becomes helpful if these variables are considered with their complex functioning. It implies that economic models in positive economics are to be made to approach realistic situation. Whether in positive economics or normative economics, realism is the slogan to be listened to Economic models, which are taken as engines of understanding, are bound to be complex, if this slogan`is to be fulfilled.

It does not imply that static analysis is not useful. Static analysis abstracts complexities and reveals the basic nature of economic variables. This contribution of static analysis in economics is inherent so much so that without it dynamic analysis is likely to be less understood.

Equilibrium concept is used in both static and dynamic

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analyses. Static equilibrium is that situation in which the variables are at balance without surplus or deficits ; for example, equilibrium between supply and demand of a commodity. The variables are at rest, just as a body is at rest under the influences of forces which balance themselves. How this equilibrium gets there is no concern of of static analysis ; it does not investigate the link of the variables between the past, present and future. Static analysis may be more concerned with short-period analysis where the variables do not vary and remain constant. In the long period, variables change. But, this must not be allowed to create confusion between the essential features of static and the dynamic analysis : variables are timeless in statics, whereas they are dated in dynamics.

In dynamics distinction is to be made between equilibrium dynamics and disequilibrium dynamics. In equilibrium dynamics 'the variables satisfy unlagged equilibrium conditions appropriate to the model considered', and in disequilibrium dynamics, 'there are lags and one or more of the equilibrium conditions lapses and must be replaced by some disequilibrium or error-adjustment mechanism.' This distinction should be clear from the example of a spinning top. The motion of a spinning top explains the phenomena. 'As long as the top is spinning vertically, whatever path it may follow in space, we have a problem of equilibium dynamics. But when the top wobbles, then a disequilibrium dynamic situation arises and a correction (error-adjustment) mechanism can be introduced, e.g., by the application of a whip to the top'. [Allen, (1), page 77].

Equilibrium dynamics embraces the concept of a stationary state which follows directly from static equilibrium. The stationary state is a static equilibrium situation where the variables, though dated, continue unchanged from one period to another. This reminds one of the short period equilibrium. In contrast to stationary state situation, there is a steady-state growth situation where all the variables grow at constant rates. This reminds one of long period equilibrium.

Disequilibrium dynamics includes systems of variety much greater in scope than equilibrium dynamics does and is of closer approach to realism. A very simple example of disequilibrium dynamics is the famous Cobweb model where an error-adjustment mechanism is introduced in the supply equation, thus : (1) $D_t = D(P_t)$; (2) $S_t = S(P_{t-1})$, where D, S and P are demand, supply and price respectively.

The comparison of one static situation with another is studied in what is known as comparative statics. It is as if still photographs at different times. Dynamics is a movie photograph which shows the movement of the variables with the passage of time.

The mathematical methods used in static analysis are to specify algebraic equations in the variables involved with restriction on parameters as well as on variables (usually inequalities). The mathematical methods used in dynamic analysis are to use difference or differential equations. The difference equations are specific to period analysis, that is, where time is divided into discrete values called periods. The differential equations are specific to continuous analysis, that is, where time is taken as a continuous variable. These two systems have their own characteristics ; which system is to be pursued is dictated by the nature of the problem to be talckled. For further discussion, see Allen, (1), page 5.

In dynamic analysis, the complexities of an economic system is catered for with the formulation of difference or differential equations. Moreover, varieties of lags are introduced in the system of equations. The introduction of complicated lags is constrained upon by the limitations of the mathematical handling of the system. The limitations of the mathematical tools used in the analysis are an obstacle to achieving closer approach to realities.

The empiricism is a deep cry now-a-days. Economic hypothesis is to be formulated and tested empirically. This necessity imposes restrictions on the nature of hypotheses formulation. An hypothesis, if untestable, is useless. An hypothesis, though rich in contents, is untestable because of data limitations, or of limited statistical tools, or of both. All this makes a realistic study a very difficult task. The ingenuity that is to be commanded upon for accomplishment of such a task is incredible. Still, there are glimpses of clever contrivance in economic literature. This brings one into the realm of econometrics which has become an answer, though incomplete, to realism. However, econometrics is travelling fast in a direction which is undesirable. Just as theoretical economics soon proves to be futile, because it is devoid of empiricism, similarly, econometrics is moving fast towards theory. Only to be discovered later that it is devoid of its purpose for which it is discovered. Alas, this discovery is yet to come to light.

An Illustration

A model of the monetary sector for Ghana

In the following model, an attempt is made to explain the determination of money supply [see Ghosh, (bc)] :

Supply of Money :	$X_{1t}=a_o+a_1X_{2,t-1}+u_{1t}$	(1)
Demand for Money :	$X_{1t}=b_o+b_1X_{3t}+u_{2t}$	(2)
Price Equation :	$X_{4t}=c_o+c_1X_{2t}+u_{3t}$	(3)
Identity :	$X_{3t}=X_{4t}X_{2t}$	(4)
Equilibrium condition : **(Supply=Demand)**	$X^{s}_{1t}=X^{d}_{1t}$	(5)

Where the variables are : X_{1t}=money supply in period t ; X_{2t}= Gross Domestic Product (G.D.P.) at constant prices in period t ; X_{3t}=G.D.P. at current prices in period t ; X_{4t}=Implied price level in period t ; u_{it}=Stochastic term, $i=1, 2, 3$. All these variables, if written as deviations from trends (T), will be denoted by lower case letter X : $X_{1t}=X_{1t}-T_{x1}$ or $X_{1t}=X_{1t}+T_{x1}$; Similarly, $X_{2t}=X_{2t}+T_{x2}$; $X_{3t}=X_{3t}+T_{x3}$, $X_{4t}=X_{4t}+T_{x4}$, where T_{x1}, T_{x2}, T_x and T_{x4} are trends—each a function of time (t). For statistical estimation purposes, the variables are made trend-free, to make the regression coefficients meaningful. See Ghosh, (6a).

Using conditions (5) and (4), the equations (1) to (3) produce the following difference equation :

$$b_1\ c_1\ X_{2t}\ X_{2t}+b_1[c_o-c_1\ T_{x2}+T_{x4}]X_{2t}-a_1\ X_{2,t-1}$$
$$=a_o-a_1(T_{x2})_{t-1}-b_o+b_1\ T_{x3} \qquad \ldots \qquad (6)$$

(6) is a difference equation in X_{2t}, a first-order equation with variable coefficients. The coefficient of $X_{2,t}$ is not constant but is a function of time (t), since it contains trend-terms T_{x2} and T_{x4}. This equation is to be solved for X_{2t}. Equation (6) is complicated, because of second power of X_{2t} in the first term on the left-hand side. However, with the eyes on empirical results, this equation would be simpler, noticing that a_o, b_o, c_o and c_1 are not important, that is, they are found to be statistically insignificant. Therefore, with these empirical findings, put $a_o=b_c=c_o=c_1$, and obtain equation (6) as follows :

$$(b_1\ T_{x4})X_{2t}-a_1\ X_{2,t-1}=b_1\ T_{x3}-a_1(T_{x2})_{t-1}$$

$$\text{or}\quad X_{2t}-\frac{}{b_1\ T_{x4}}X_{2,t-1}=\frac{b_1\ T_{x3}-a_1(T_{x2})_{t-1}}{b_1\ T_{x4}} \qquad \ldots \qquad 6(a)$$

Its complementary equation is

$${}^{d}_{2t}\quad \frac{a_1}{b_1\ T_{:}}\quad {}^{d}_{2,t-1}=0 \qquad\qquad (6b)$$

Where x^{d}_{2t} is deviation from equilibrium value Y_{2t}.

The solution of (6b) is : (see Levy and Lessman, (11), for the development of this topic) :

$$x^d(t)=\left(\frac{a_1}{b_1}\right)^t \frac{1}{\alpha^t} \frac{1}{F(t-\lambda_t)F(t-\lambda_2)} \quad \cdots \quad (7)$$

Where F is gamma function and λ_1 and λ_2 are the roots of the polynpomial T_{x4}, where T_{x4} ie factorised as follows :

$T_{x4}=\alpha(t-\lambda_1)\ (t-\lambda_2)$, where T_{x4} is quadratic in this example.

In this solution, using empirical results, the roots λ_1 and λ_2 are conjugate complex and give rise to the possibility of sinusoidal function, indicating oscillations in X_2. The results give interesting time-path of X_2, which is gross domestic product at constant prices. The time-path of X_2 as given by (7), will move around the equilibrium value of X_2, ie., $Y_2(t)$. Since the right-hand side of (6a) is a function of time, $Y_2(t)$ as particular integral of this difference equation will also be a function of time, so that $Y_2(t)$ moves with time.

The above illustration indicates the nature and complexity of a dynamic economic model. Although this economic model is formulated in a relatively simple way, the solution of the resultant difference equation—itself not simple—gives highly complicated, though quite interesting, results. The outstanding feature of the difference equation (6a) is that the coefficient of $X_{2,\,t-1}$ is not constant ; it is a function of time and varies with time.

Bibliography

(A) On Statics and Dynamics in Economics

1. Allen, R.G.D. : Macro-Economic Theory, Macmillan, New York, 1968, chapter 5.

2. Archibald, G. C. and R. G. Lipsey, An Introduction to Mathematical Treatment of Economics, Weidenfeld and Nicolson, London, 1967, chapts. 13, 15.

3. Baumol, W. J. : Economic Dynamics, An Introduction, Macmillan. New York, 1959, Second Edition.

(B) On Economic Models

4. Allen, R. G. D. : Mathematical Economics, Macmillan, New York, 1959, chapters 1—3, 7—11, 17—19. Also, Allen (1), above.

5. Laneaster, K : Mathematical Economics, Macmillan, New York, 1968, Parts II and III.

(C) On Econometric Models and Methods

6. Ghosh, Ranen : (a) 'National Income and Money Supply in India, 1951-63 : An Econometric Study', Economic Affairs, Vol. 15, April, 1970.

(b) 'The Nature and Pattern of Economic Growth in the Fifth Five Year Plan of India', Economic Affairs, Vol. 19, July-Aug., 1974.

(c) 'The Relationship between Money Supply and National Income in Ghana', Departmental Research Project, Institute of Statistical, Social and Economic Research, University of Ghana, Legon, June, 1974.

7. Griliches, Z : 'Distributed Lags : A Survey', Econometrica, Vol. 35, 1967, pages 16—49.

8. Johnston, J. : Econometric Methods, McGraw-Hill, Inc. 1972, Second edition, specially chapter 10.

9. Koutsoyiannis, A : Theory of Econometrics, Macmillan, 1973, Specially chapter 13.

(D) On Mathematics

See Allen, (4) : Chapters 4—6 ; Lancaster, (5) : Part IV—R 10 and R 11.

10. Allen, R. G. D : Mathematical Analysis for Economists, Macmillan, London, 1949, chapter 20.

11. Levy, H. and F. Lessman : Finite Difference Equations, Sir Isaac Pitman and Sons Ltd., London, 1959.

CHANGING PATTERN OF THE WORLD GRAIN TRADE

Region	1934-38	1948-52	1960	1966	1973
		(million metric tons)			
North America	+5	+23	+39	+59	+91
Latin America	+9	+1	0	+5	—3
Western Europe	—24	—22	—25	—27	—19
Eastern Europe & U.S.S.R,	+5	—	0	—4	—27
Africa	+1	0	—2	—7	—5
Asia	+2	—6	—17	—34	—43
Australia & New Zealand	+3	+3	+6	+8	+6

Source : Based on U. S. Department of Agriculture data.

Construction in Indian Plans

(WITH SPECIAL REFERENCE TO THE FIFTH PLAN)

K. N. Prasad*

In a plan, such as the Fifth Five-Year Plan of India, which will be geared mainly to the reduction of mass poverty and unemployment, the role of construction activity has got to be estimated specifically insofar as this activity pervades in varying degrees all sectors of an economy at all stages of its development, though it claims a most predominant proportion of investment in social over-head capital. This is why, for the first time, it is going to be recognised as a separate sector *per se* in the Fifth Plan and the necessary details are going to be worked out. The present paper is an attempt to outline this problem in the broad perspective of India's development planning, to delineate briefly its various aspects, theoretical as well as applied, and to tender some advice that would help derive maximum benefits from constructional outlays. "A specific estimate of the role of construction in India's investment programme", says Malenbaum, "is of importance to an analysis of employment opportunities". W. A. Lewis in his pioneer work laments that the enormous importance of construction is not generally realized since many people think of capital formation chiefly in terms of installing machinery but forget that in truth machinery installation comprises, to a considerable extent, structure building of one sort or another. "Civil engineering is the key industry in capital formation, with mechanical engineering following some distance behind. "From this proposition two corollaries can be derived, viz., (1) If finance is available, then the real bottleneck which impedes a rapid acceleration of investment is the capacity of the contruction industry to extend itself. (2) In the earlier stages of economic development the greatest need for capital is for public works and public utilities, which in modern time are not directly open to private foreign investment. Hence private foreign investment is of limited relevance to the capital needs of the developing economies. It has been noticed that in these countries the investment plans are often 'frustrated' exclusively by their failure to ensure that the construction activity copes with the work which is expected of it. But this is not 'a formidable obstacle' because "It is no more difficult to expand the building industry swiftly than to expand an army swiftly, if one takes the problem seriously and adopts measures for recruiting and training the necessary labour. But it is surprising how often production programmes fail to make this provision." The Approach document on the Fifth Plan recognises, for the first time, construction as 'a separate sector' and makes 'a specific provision made for it ! Construction would account for more than half of 'the total on-site cost of fixed capital formation'. Over Rs. 25,000 crores are to be invested in it and the gross value added in it is expected to increase at an annual rate of 8.2 per cent.

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Construction was mentioned as an item of investment in the private sector (estimated at Rs. 1,000 crores) during the Second Plan. It was again mentioned in that plan while attributing to it its share in the national product. The Third Plan chapter 17 contained one section (Section V) entitled as "Economy in Construction". The authors showed their awareness of the fact that "in many fields of development construction costs account for a substantial proportion of the expenditure".

Calculations made by Malenbaum of constructional outlays during the first two five-year plans revealed that such outlays claimed almost one-half of the total investment. In an appreciable measure the overhead expenditures are on construction. Besides, allocations in other sectors also encompass constructional outlays. According to a study, the percentage of investment in construction to total investment during 1955-56 to 1965-66 remained above 50, though it fell from 70.3 p.c. to 54.6 p.c. However, the proportion of employment in construction to total employment remained unchanged. When we confine to the break-down of employment in construction, we find that of all workers 49.7 per cent are engaged in the building industry, 32.8 per cent in irrigation, 14.8 per cent in transport, and 2.7 per cent in communications.

The expansion of construction is linked with increase in gross fixed capital formation. As a rule, the smaller the proportion of the working force in construction, the lower the rates of growth of national income, saving and investment of a country. All the same, with economic development just as net investment tends to decline relatively to gross investment, so does construction expenditure relatively to those on equipment within the total of gross investment. The relative shares of construction and of equipment in gross fixed capital formation turn on how well endowed the country already is with the social overheads. In the developed countries more than half of capital formation consists of work in building and construction such that "the expansion of capital is a function of the rate at which the building and construction industry can be expanded". In these countries public works and public utilities use up more capital than goes into manufacturing. A sizable part of economic activity is needed only to maintain the capital stock intact. In the less developed countries the proportion of national income required for replacement is much smaller as their capital stock is much smaller in relation to income. Table No. 1 gives data about the allocation of investment among the various overheads in the different plan.

Table No. 1

Showing Percentage Outlays on Overheads in the
Five-Year Plans

Head	First Plan	Second Plan	Third Plan	Fourth Plan
	(As Percentages of Total Outlay by the Central and State Governments)			
Irrigation & flood control	17.0	9.0	9.0	6.8
Power	11.1	10.0	13.0	15.4
Transport & communications	23.6	28.0	20.0	20.3

Source : Prepared from the Five-Year Plans. The figures for the Fourth Plan are proposed targets.

Overheads are the key to the rapid development of an economy. There usually needs to be 'some technical relationship' between the components of total investment, such as agriculture and transport, industry and power, private and public investments in any given sector. The overheads are of vital importance in securing the expansion of output in other sectors. But what is most important of all, there must be a 'balance' within the productive system between the supplies of various raw materials, intermediate products and essential services and the requirements of the using industries, as Reddaway puts it. Were this sort of balance not to be attained, the resulting bottlenecks and shortages would culminate in loss of output. The worse part of it is that the essential services cannot be imported and they are prone to critical shortages.

The very mention of the term 'balance' diverts our mind to one particular version of the balanced growth theory. That version emphasizes the 'technical indivisibilities' in overheads and the necessity of reaching a balance between the public utilities providing transport, communications and power, on the one hand, and the industries manufacturing or raising producers' and consumers' goods, on the other, bearing in mind the need of averting bottlenecks and excess capacities in those public utilities. However, Myint suggests two 'serious' qualifications to the argument made repeatedly that an underdeveloped country cannot start developing unless it is equipped beforehand with a complete outfit or contingent of all over-heads. One is that the different underdeveloped countries already possess those overhead facilities in varying degrees and for most of them the empirical issue is not whether to have a completely new outfit of these overheads started from a clean slate or scratch but rather how much to extend and improve the existing overheads. And two, even if it is accepted that in the special circumstances of a country a certain fairly large lumpy overhead is essestial, the fact remains that such a large project cannot immediately be completed to contain a simultaneous expansion of the consumer goods industries. The likelihood of altering the phasing and the time-profile of a project introduces a lot of flexibility to the economic size of a technically discontinuous overhead investment.

Incidentally, there is another type of 'balance' involved in this process. By deciding on the quantum of resources to be devoted to infrastructural investment over a span of years the State can also predetermine to that extent 'the balance between public enterprise and private.' But from this it should not be construed to imply that the State will be in a position precisely "to predict how that balance will change" because public infrastructural investment is apt to bring into play a couple of contending sets of forces: One, opportunities for private investment are limited to the degree that resources which may otherwise be devoted to it are withdrawn into the public sector. Two, outlay on the new infrastructural assets provides private enterprise with new markets, and the assets themselves, when completed and put in operation, generate external economies, whereby opportunities for private investment are enhanced.

In sum, at a fundamental level the development strategy will be governed by the expediency of eliminating bottlenecks. Thus, in the planned economy of India the growth of the social overheads has to be "so programmed as to leave a surplus capacity at every stage to enable industry to leap forward uninterruptedly". Nevertheless, the planners must be clear in their minds as to the distinguishing features of diffierent types of overheads. One type is composed of those overheads (like health and sanitation, education and labour training) that genuinely create external economies in 'the more widely accepted sense of the word'. The second type comprises those of them (like railways, roads, harbours) that yield external economies because internal economies in them stemming from their own indivisibilities spill over into the (private) cost calculations (and are thus internalised) of the rest of the economy. The third type of them (like irrigation and flood control and energy) does not directly yield external economies but by removing bottlenecks and providing the essential inputs makes feasible certain investments in the private sector.

Althrough the specified targets for the First Plan programmes did not list even one item for construction, yet transport and communications got the topmost priority in allocation of resources. This is explained by 'an effort to make rural districts less isolated'. But the sight fixed for power was the lowest. In the Second Plan construction appeared explicitly, both as a category of investment and as output, as noted above. In absolute terms outlays on transport and communications were stepped up substantially. The programmes for irrigation and power were conceived as 'part of a wider programme for increasing the area under irrigation from Government works two-fold and of increasing the supply of power six-fold over a period of about 15 years. Industrial development during the First Plan had rendered a bottleneck in power inevitable. The change in priorities (power superseding irrigation and flood control) was occasioned by this factor. Real development of transport network dates from the Second Plan. But oddly enough, when this plan was reappraised in 1958 railways and power got excluded from the so-called 'core' projects, and in consequence, suffered a set-back. During the First and Second Plan periods public sector investment in the overheads was 'compelled by shortages or bottlenecks' and was not the outcome of 'a policy to develop capacity ahead of demand'. The stage theory of the operation of the law of diminishing returns throws a flood of light on this phenomenon. Whatever unused capacity the overheads in India had was harnessed in the initial years of the First and the Second Plan as industry and agriculture expanded. But the latter continued to expand at a faster pace than the former, with the result that an acute imbalance was entailed. This came to hinder the further growth of industry and agriculture in the country. At the same time, the development of overheads under the aegis of planning has been geographically more dispersed (proportionally less in respect of railways and more in that of irrigation and soil conservation) compared to the position prior to independence.

The Third Plan admitted that there had been more or less constant heavy strain on the essential services. But while it augmented the absolute allocations to each of them, in relative allocations power gained, transport and communications lost and irrigation and flood control it retained its place. Keeping this in view, a critic commented that the Third Plan did not bear 'the imprint of the belated wisdom' and was full of apologia. In the Fourth Plan substantially increased provision was made in almost all sectors though there was more notable increase in power outlay. The Approach paper on the Fifth Plan envisages 'enlarged programmes' for all the overheads.

Table No. 2 shows the relative shares of the private and the public sector in overhead investment. While the relative share of the private sector in irrigation and power is on the decrease, that of it in transport and communications is on the increase. This is a disquieting development. It is a well-known fact that public invesment in overheads is overwhelmingly predominant owing to a multitude of reasons (only some of which need to be indicated here). So far as construction is concerned, in the underdeveloped countries private demand for it is limited. Also, private

Table 2

Relative Shares of Private & Public Sectors in Overhead Investment as Percentages of Total Investment

Heads	Second Plan		Third Plan		Fourth Plan	
	Private Sector	Public Sector	Private Sector	Public Sector	Private Sector	Public Sector
Irrigation and flood Control	+	6.0	+	6.0	+	6.8
Power	0.6	6.4	0.4	9.6	0.8	15.4
Transport and Communications	2.0	19.0	2.0	15.0	10.2	20.3

Source: Prepared from the Five-Year Plans. Against irrigation and flood control no figures are given since the outlays on them in the private sector are included in those on agriculture and community development.

industrial demand for it is 'generally sporadic and unstable'. This places an increased responsibility on the government for the maintenance and expansion of the level of construction employment. In the overheads colossal investments are consistent with a small flow of final output and tend to enter the income flows indirectly. The overhead facilities often but not always provide services necessary for a whole gamut of other activities. They usually supply inputs which are not specific to one particular use. They are by nature lumpy and as such yield economies of scale. But the yields from them tend to be spread over a long period of time and it is normally difficult to trace and charge all the beneficiaries from the services provided. It is no accident, therefore, that the services for which one cannot charge in proportion to use are ordinarily in the public sector. Double counting and uncertainty bedevil the calculation of net social benefit of investment in them. To avoid private monopoly and to overcome individual 'myopia' and to exploit external benefits they are generally state-financed and state-managed. Their construction confronts the planners with 'the problem of immeasurable outputs' which economic theory mostly ignores.

In the early stages of development not only heavy investments in the social overheads are essential but also the incremental capital-output ratios for these investments are very high ; they are highly capital-intensive. During the Fourth Plan these ratios for electricity and gas, and transport and communications were 15.20 and 9.39 respectively. During the Fifth Plan they are estimated at 18 54 and 12.78 respectively. During the period of the first two plans these ratios were : 3.05 for power, 4.90 for railways and 2.28 for communications. In the Fifth Plan the incremental capital-output ratio for construction is put at 0.09, a very low figure indeed, for two reasons : One, that in it there is predominant use of labour-intensive methods. Two, while the gross value added through construction is fully shown under this head, the investment in this head is partly diffused over and incorporated in other sectors.

Another characteristic of investment in the infrastructure stands out in bold relief. Investment in transport, communications and storage has a tendency to rise *pari passu* with all other investments and the ratio between the two does not vary materially with the structure of the economy or the economic development but the investments in power and irrigation are less stable. Within one and the same category four kinds of differences between alternative projects and project designs can be recognised : (a) Differences in the volume and type of labour required for construction ; (b) Differences in the volume and the type of equipment and materials required for construction ; (c) Differences in the period involved in construction and in the life of the project ; and (d) differences in the volume of output consequent on the investment. These various kinds of differences are pertinent to the criteria or goals to be attained.

Certain types of construction lend themselves easily to labour-intensive methods. In them labour is the primary factor. The under-developed countries can reach the comparative advantage of factor endowments through construction. This is the leading reason why the framers of the Approach to the Fifth Plan label construction as 'a leading sector' for creating additional employment. Healey in his study illustrates how there is an ample scope for greater expenditure on labour-intensive but productive fields of public investment in India. He observes that 'although there have been technological and locational restraints on the use of more labour-intensive methods of earthwork on river valley projects, there is evidence that mechanized methods have only a narrow economic advantage over manual methods when the low utilization of equipment is taken into account. Labour-output ratio in construction depends on (i) design and raw materials (ii) quality of labour, and (iii) techniques of production. The capital equipment required in construction is relatively small and available from indigenous sources In addition, there is a large volume of surplus labour and a good supply of most materials. The multiplier effect of construction is usually regarded as 'satisfactory.' Narashimham's investigation has revealed that in India to raise employment by one per cent investment in fixed capital requires to be raised by 2.64 per cent. In other words, if investment in fixed capital increases by 1 per cent, employment will increase by 0.38 per cent. If wage rises by 1 per cent, labour supply will rise by 0.50 per cent. If the employment of wage-workers is to be augmented by 1 million, then there wage will have to be raised by 0.008 per cent. If the cost of living of the working class rises by 1 per cent, its wage will rise by 0.02 per cent. Finally, the amount of construction activity which it would be desirable to undertake in India is unlimited. However, the employment effect of this activity will vary with the proportion of construction in total fixed capital formation. The higher is this proportion, the greater will this effect be. The employment effect will also rest upon the techniques of production adopted for the various processes as much as upon the volume and pattern of allocation of the given investment. Emphasis on labour-intensive techniques in construction need not always connote slower production for there can be several cases where by putting more workers on the job, the production time under the labour-intensive method could be made synchronous with the capital-intensive one. Even so, "there are also types of construction work for which the time, cost, quality or other technical considerations definitely favour the use of machines instead of men." It should also be remembered that emyloyment in construction is characterized by 'casualness, irregularity and instability.' Thus, according to Narasimham's study, on an average, a skilled worker is employed for 9.3 months and an unskilled, for 7.5 months in a year. Some factors responsible for this are : Excessive supply of unskilled labour, existing recruitment methods, and lack of close correlation between investment planning and manpower planning.

Construction in the overhead sector (as elsewher) has to encounter a number of obstacles. To exemplify, it cannot go far without an adequate supply of steel and cement. Many construction projects being fairly capital-intensive involve much use of heavy equipment that is usually imported from abroad at the cost of a great deal of foreign exchange Raj's study had brought out that 40 to 45 per cent of the total expenditure required foreign exchange for importing machinery and equipment, bulk of fuel and lubricants, technical personnel, etc.

The limits to the expansion of fixed capital formation are also the limits to the expansion of construction work One limiting factor in the expansion of overheads is the market. But when the market is not limited, the amount of capital available for investment in the construction of the overheads, both internal savings and external loans, may be inadequate. As Reddaway puts it, the amount of construction which can be done is limited by the amount which the community is prepared to save together with the amount of external capital which can be obtained. Another barrier is this : Some types of construction (e g., factory building and hydro-electric projects) serve little useful purpose unless there is also investment in plant to be installed as part of the whole project. So the factors which inhibit the supply of plant (e.g., foreign exchange and external capital) impose an indirect limit. In case of some other types of construction (e g , minor irrigation) the constraint may be presented by want of organising ability, that is, how to make the beneficiaries pay. Last but not the least, shortage of skill may at times prove to be the most important hurdle, as Lewis very emphatically points out.

The Approach Paper on the Fifth Plan enumerates three shortcomings of construction activity in the country, namely, lack of economy and speed, lack of efficient construction organizations, and bottlenecks in the supply and movement of construction material and equipment. "In the past delays, inefficiency and cost over-runs in construction have, perhaps, been the most important factor for shortfalls in Plan achievements." One example can be reproduced from Healey's study, which is this: The most significant and pervasive factor for large cost revisions for the river valley projects was inadequate geological and technical investigation of these projects in their initial stages rather than changes in the prices of materials and labour. Solutions would lie in improved project preparation, promotion of efficient construction organizations, and elimination of bottlenecks.

The formulators of the Third Plan had held that there was considerable scope for saving on construction costs and avoiding delays in keeping to the time-schedule for completing works. They made a number of suggestions for effecting economy and or saving time. They stressed 'careful passing of projects in relation to one another. With a view to ensuring continuity in planning as well as flow of benefits they prescribed a spectrum of projects at each stage in development. They enjoined some measures of balance between projects with long and those with short periods of gestation through strict regard for the pre-conditions of physical planning and through close co-ordination in planning and execution of projects so that the programme for each related sector was conceived of as 'a continuous and integrated whole.' They urged that the growth-potential-generating schemes should be pushed through expeditiously. Time is of crucial significance in construction as on it hinges a great many events, such as the speed of rotation of fixed resources, the obsolescence of an investment, the immobilization of social resources, the economic efficiency of a given dose of investment, and so on. "The scale on timing ought to be sufficient" to sustain economic growth but not wastefully over-developed in anticipation of demand which does not materialize. Perspective or advance planning and farsightedness are indisdensable because efforts to tackle gaps or lacunae could bear fruit only after a long lapse of years and because progress or retrogression of one overhead determines and is in turn determined mutually and essentially by that in others as well as in the entire economy. The modern philosophy is that overheads should be planned to keep slightly ahead of expected development. In the words of Haq, "Bottlenecks are more damaging than idle capacity in overhead facilities, and... demand for these inputs has an amazing habit of exceeding one's expectations."

This is tantamount to saying that it is possible to break 'foreseeable' bottlenecks only if projects are so planned as to dovetail neatly into one another but this presupposes careful phasing of different programmes since bottlenecks and excess capacity are likely to be accentuated by unphased or badly phased projects. For ensuring timely decisions on projects perspective planning is unavoidable. Lastly, selections from alternative investment policies can be sensitive to the time-horizon (or dimension) of planning.

Also, there is need for a flexible approach to the balance between private and public participation in overhead development. Healey, for instance, suggests that where there is evidence of willingness of private investors to establish these facilities, obstacles imposed by the government should be removed and assistance provided. If the government believes that private provision will not be adequate, it can step in to supplement these facilities. This view can be traced to the sense of frustration of the planners in some underdeveloped countries from lack of responsiveness on the part of private entrepreneurs to the external economies provided by the government in regions where business prospects are dim and dismal. Another guideline indicated for the role of the State is that it should be based on the maxims of comparative advantages and economy.

Furthermore, there is a positive case for achieving greater co-ordination in the management and development of particular public services (like rail-road, irrigation, rural roads, etc.). Co-ordination will help minimise cost of supply. An excessive proportion of investment goes into capital-using urban projects rather than labour using rural ones because the rate of interest is too low in towns and too high in the country-side. Higher rates of return are required on overhead capital in order that they approximate more closely to costs. This will permit more socially investment decisions in other areas of the economy.

In fine, it will be sensible to concentrate expenditure on a few inter-related fields where visible results can be realized quickly and which have the 'possibility of snow-balling effect' and where a clear 'breakthrough is possible in a reasonable time.'

The demand for all products of the constructional trades depends directly on the total volume of investment and is peculiarly fluctuating, insofar as 'the rhythm of this fluctuation is derived in an exaggerated form from the rhythm of activity of industry as a whole.' Construction goods are probably the most durable of all the products of industry. In an economy (according to the proportions in which private and public sectors are blended) the demand for them is likely to be more or less periodic and recurrent, or speady and continuous. According to an estimate, a ten per cent spurt in the industry's need for mechanical construction may engender an eighty or hundred per cent increase in the actual mechanical construction. During times of industrial expansion the constructional trades will receive a very much 'magnified stimulus' as they will expand in response. But after this the demand will probably fall off considerably and the constructional trades will find themselves heavily 'over capitalised and over-producing.' "The rise in price in this case will tend to be *deceptive* index ; it will not be a true index of the state of demand over the *average* of the ensuing years." Were foresight perfect, the interest of an economy planned on the socialist lines would lie in organising its investment programme in such a manner that the progress of construction and technical innovation followed a smooth path of ordered development into the future until the ideal goal of capital saturation was reached. Moreover, the distribution of construction work between projects of different categories in relation to the future is germaine to the distribution of labour in production in a balanced way.

Fertilizer Use : West Bengal

(000 tonne)

	Nit.	Phos.	Potash
1961-62	15.4	5.3	3.7
1969-70	33.8	10.9	10.7
1970-71	46.7	12.4	13.8
1972-73	52.4	16.4	23.2
1973-74	54.0	18.4	26.9
1974-75	100.4	30.4	31.1

Source : Ministry of Finance West Bengal,

Farm Technology and Change in Factor Shares

Joginder Singh* and D. S. Sidhu**

The new developments vis-a-vis technical progress may benefit only a subset of rural population. Whenever a breakthrough occurs, the early adopters may gain more than the laggards do. The income disparity would increase or decrease accordingly, as the return to different production inputs is changed with the increased use of technical inputs. This change would depend upon whether the technical inputs are neutral or non-neutral to scale. To analyse this, the following model was used.

Methodology

The year 1968-69 being the normal agricultural year, was selected for this study. The data generated in the scheme, "Studies in Economics of Farn Management, Ferozepur District (Punjab)",[1] were used because farms categorized based on the level of technology had sufficient number of observations in each farm group. Therefore, it was possible to measure the effect of change in technology on the share of various input factors.

The Model

The Cobb-Douglas type of production function was assumed suitable as it facilitates the measurment and interpretation of results. For each category of farms the regression coefficients for the Cobb-Douglas type production function are shown in table 1. and denoted as follows :

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[1] Kahlon. A. S. and S. S. Miglani, "Studies in Economics of Farm Management, Ferozepur District (Punjab), Department of Economics and Sociology, P.A.U., Ludhiana.

Bullock-operated, tubewell irrigated farms

$$Y = x_1^{\beta_1} \cdot x_2^{\beta_2} \cdot x_3^{\beta_3} \cdot x_4^{\beta_4} \cdot x_6^{\beta_6}$$

Tractor operated, canal irrigated farms

$$Y = x_1^{\beta'_1} \cdot x_2^{\beta'_2} \cdot x_3^{\beta'_3} \cdot x_4^{\beta'_4} \cdot x_5^{\beta'_5}$$

Tractor operated, tubewell irrigated farms

$$Y = x_1^{\beta''_1} \cdot x_2^{\beta''_2} \cdot x_3^{\beta''_3} \cdot x_4^{\beta''_4} \cdot x_5^{\beta''_5} \cdot x_6^{\beta''_6}$$

where :

Y = Gross output per hectare

X_1 = Farm size (Hectares).

X_2 = Human labour hours/hectare

X_3 = Bullock labour hours/hectare

X_4 = Cost of fertilizers used/hectare

X_5 = Tractor hours/hectare

X_6 = Tubewell irrigation hours/hectare.

The advancement of technology was denoted by $x_4 > C$, $x_5 > 0$ and $x_6 > 0$, which was likely to cause per hectare output to increase and partial elasticities of all production factors to change, resulting in the variations of share of factor inputs.

Now, if

$$\frac{\beta'_1}{\beta'_4} > \frac{\beta_1}{\beta_4}$$

It shows that the share of land increased as a result of fertilizer use and change in the source of power (bullock to tractor). Similarly, if

$$\frac{\beta'_2}{\beta'_4} > \frac{\beta_2}{\beta_4}$$

Share of human labour is increased and

$$\frac{\beta'_1}{\beta'_4} < \frac{\beta_3}{\beta_4}$$

Share of bullock labour has declined.

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2. Srivastava, U. K., R. W. Crown and E. O. Heady, "Green Revolution and Farm Income Distribution", Economic and Political Weekly, VI (52). Dec. 25, 1971.

An hypothetical model of similar type was devloped by Srivastava, Crown and Heady.[3] They distinguished two types of technologies, i.e., biological and mechanical. Both these forms of technologies were regressed against the output, considering availability of data for two points of time ; one before using technology and the other after using technology. To demonstrate that as variance in adoption rates increased, the initial income spread in the farm sector would widen ; five classes of inputs were distinguished viz., land, human, labour, bullock labour, mechanical inputs and biological inputs.

Because of non-availability of time series data, cross sectional data were used, dividing the farms used on different levels of farm technology and thus change in factor shares was examined.

Since only cross sectional data were available, it was not possible to separate out the effect of each individual component of farm technology. Therefore, combined effect of two components at a time on the share of farm factor inputs was examined.

Table I

Regression Coefficients of the Variables for Different Farm Categories (1968-69)

Farm Category	Constant	Regression Coefficients X_1	X_2	X_3	X_4	X_5	X_6	R_1
Bullock operated, tubewell irrigated	29.9760	0351	.2897**	.3286**	.0129	—	0179	.5319*
Tractor operated canal irrigated	29.3766	.1693	.6957	.0724	·0238	·0791		.5913*
Tractor operated, tubewell irrigated	15.8116	.0582	.6744**	0143	·0548.	0269	0065	.5285**

* Significant at .05 prob. level.

** Significant at .01 prob. level.

Effect of fertilizer use on factor-shares as tractor operated canal irrigated farms shift to tubewell

As will be seen from table 1, on tractor operated farms, the share of land and human labour declined as a result of fertilizer use, accompanied by shift of farms from canal irrigation to assured irrigation (tubewell).

$$\frac{\beta''_1}{\beta''_4} < \frac{\beta'_1}{\beta'_4} \quad \text{(the share of land decreased)}$$

(1.062) (7.113)

and

$$\frac{\beta''_2}{\beta''_4} < \frac{\beta'_2}{\beta'_4} \quad \text{(the share of human labour decreased)}$$

(12.307) (28.811)

Decline in the share of land and human labour might be due to rise in the share of other factors like capital and entrepreneur. Since the tractor operated farms were, in general, more capital intensive and their further shift from canal irrigation to tubewell irrigation increased the farm capital and thus increased return to capital. Similarly, as farms shifted from canal irrigation to assured irrigation, yield uncertainty was reduced which resulted in increase of profit.

Effect of tractor use on factor-shares as tractor operated canal irrigated farms shift to tubewell irrigation

As a result of shift of farms from canal irrigation to tubewell irrigation and increased tractor use

$$\frac{\beta''_1}{\beta''_5} > \frac{\beta'_1}{\beta'_5} \quad \text{the share of land increased}$$

(2.164) (2.140)

$$\frac{\beta''_2}{\beta''_5} > \frac{\beta'_1}{\beta'_5} \quad \text{share of human labour also increased}$$

(25.071) (8.669)

Increased use of tractor on farms accompanied by assured irrigation caused increase in human labour employment and thus raised the share of labour in the gross farm incomes.

Effect of fertilizer use on factor-shares as the tubewell irrigated bullock operated farms shift to tractor operated

The combined effect of fertilizer use and shift from bullock to tractor as a source of power in case of tubewell irrigated farms, on factor-shares was examined The analysis showed that

$\frac{\beta''_1}{\beta''_4} < \frac{\beta_1}{\beta_4}$ which showed decline in the share of land

(1.0[illegible]2) (2.721)

$\frac{\beta''_2}{\beta''_4} < \frac{\beta_2}{\beta_4}$ which showed decline in the share of human labour and

(12.337) (22.457)

$\frac{\beta''_3}{\beta''_4} \quad \frac{\beta_3}{\beta_4}$ which showed decline in the share of bullock labour.

(0.261) (25.472)

The decline in the share of bullock labour was evident because the employment of bullock labour declined as the farms shifted from bullock operated to tractor operated. Shift from bullock to tractor as a source of power caused increase in capital input causing share of capital also to increase. The decline in the share of land and human labour may be attributed to rapid increase in the share of capital inputs.

Summary

The study was carried out with the objective to examine the effect of different kinds of technologies on factor-shares. To analyse this, six kinds of inputs were distinguished i.e. farm size, human labour, bullock labour, fertilizer, tractor use and irrigation. The results of the study showed that the share of bullock labour declined. The cumulative effect of mechanical inputs (i.e. tractor and tubewell) was to increase the share of land and human labour, while the biological inputs (i.e. fertilizer use) accompanied by partial mechanization caused shares of land and human labour to decline.

Foodgrais Production : West Bengal

(million tons)

	1947-48	1955-56	1960-61	1965-66	1973-74*
Rice	3.60	4.33	5.37	4.81	5.96
Wheat	0.02	0.03	0.03	0.03	0.62
Total Foodgrains	3.79	4.70	5.84	5.36	7.04

* Provisional. Source : Ministry of Finance West Bengal.

Study of Marketable Surplus of Paddy in Shahabad District

P. N. Bhargava*, V. S. Rustogi* and R. R. Pandey*

There have been many changes in the agrarian structure in the recent past. These changes are mostly in the form of agricultural production, resource utilization and disposal of the farm produce. Recent changes in the first two spheres have resulted in the monetisation of the farm structure. Farmers are obliged to use new form of inputs which are purchased from the market and are not produced on the farm or in the rural settings. They need cash for the procurement of new type of inputs as well as to meet other social and personal obligations. In order to meet these expenses farmers have to dispose of their surplus produce in the market for cash. This activity has assumed national importance because the non-farming population has to be provided with adequate foodgrains for their consumption. At present the pattern of disposal of the paddy crop and its extent of marketable surplus is not known with reasonable accuracy. This is due to the lack of attention received from various authors as well as the non-availability of representative data.

The present investigation deals with the study of marketable surplus of paddy in Shahabad district of Bihar. The objectives of the study are to examine (i) the pattern of disposal of paddy crop according to various holding size-groups as well as for the aggregate, and (ii) the nature of relationship between the marketable surplus and production of paddy crop.

For the purpose of the investigation the data collected under the IADP Assessment Surveys in Shahabad district of Bihar during the year 1964-65 has been utilized. The work on this district has not been done so far.

The second section of this paper deals with the background of the district and sampling plan while the third is devoted to the pattern of disposal of paddy and the method of analysis for examining the

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relationship between total production and the quantity disposed of and that kept apart for future disposal. The results of the investigation are discussed in the fourth section while the last section is devoted to summary and conclusions.

Background of the district and the sampling plan

Shahabad is the western-most district of Bihar State. It has a geographical area of 11,000 square kilometers and consists of 6,096 villages. The Intensive Agricultural District Programme is confined to 20 out of 41 blocks into which the district has been delimited. In the IADP area about 85 per cent of the cropped area is devoted to foodgrain crops, of which paddy occupies about 45 per cent. Other important foodgrains are wheat (21 per cent), Khesari (16 per cent) and gram (1 per cent).

The average size of holding in the district is about three and a half hectares. About 40 per cent of the cultivators have holdings less than 2 hectares (small) while holdings of size 2 to 4 hectares (medium) and 4 hectares and above (large) are shared equally by rest of the cultivators. Only about one-eighth of the cultivated area is accounted for by small cultivators while two-thirds of the cultivated area are accounted for by large cultivators.

The sampling plan of the enquiry was one of stratified multi-stage random sampling. For conducting the enquiry, the district was divided into 10 strata which was equal to the number of investigators posted. 12 villages were selected at random from each stratum and in each selected village eight cultivators' holdings were selected at random for detailed study.

Definition of Marketable Surplus

Marketable surplus in this study has been defined as the quantity sold out during the year and the quantity kept apart for later disposal. Under the enquiry the data were collected from the cultivators on the various aspects of disposal during the period July 1st, 1964 to June 30th 1965. This consisted of the data on the quantity sold and that kept apart for (i) later disposal, (ii) for seed, (iii) for family consumption and (iv) for other kinds of disposal. The data on stock at the end of the year were not available and therefore the cultivator was asked to specify the quantity he intended to keep for his own consumption. The former was added to the quantity sold and that kept apart for later disposal (i.e. marketable surplus) and the latter was added to the quantity consumed by the cultivator. While examining the results this limitation may be borne in mind.

Pattern of Disposal

The pattern of disposal of paddy is to be seen in the light of the fact that this is the main kharif crop and also the main staple food for the cultivators. They put out their produce for sale after making provision for seed and own consumption, etc. The disposals under different categories as percentage of the total production are presented in table 1. These are given for each holding size group as well as for the aggregate. The results indicate that on the average about 34 per cent of the total production was the marketable surplus and its proportion increased with the size of the holding ; being 6% for very small holdings (less than 1 hectare) and 41 per cent for large holdings. On an average the cultivators consumed about 50% of the total produce. The proportion of the quantity consumed by the farmers decreased with the increase in the holding size ; the proportion being 71% for very small holdings and 41% for the large holdindgs. All types of cultivators retained 6% of the produce as their requirement for seed. There was a definite trend for the wages paid in kind to the labourers. Cultivators in the large holding size group preferred to make the payments more in kind as compared to their counterparts in the other holding sizes. Small cultivators paid 13% of the total produce as rent to the owner of the land whereas this was only 2% for the large cultivators. This suggests that the small cultivators still take land on rent from other categories of cultivators. The study of the distribution of marketable surplus according to the different holding size-groups indicated that about 70% of the total marketable surplus was contributed by large holdings while small holdings contributed only 10%. The proportion of contribution by various holding size groups to the total marketable surplus was almost in complete agreement with the proportion of area occupied by different holding size-groups in the district as can be seen from table 1.

Method of Analysis

Several authors in the past have examined the relationship between the marketable surplus and total production and also the pattern of disposal of various crops. Parthasarathy and Rao studied the relationship between marketed surplus and production by examining linear function. Rao examined the relationship of the marketed surplus in relation to the total output of the farmer for all the crops. His study was based on the cultivators selected from a single village. He concluded that semi-log model was a better fit. Rajkrishna also examined some data to study the relationship between marketable surplus and total production and he was of the opinion that non-linear relationship explains better variation in the marketable surplus in relation to total production. Some authors have also suggested that exponential functions would be very suitable. However, most of the authors have suggested that marketable surplus is largely dependant upon total production.

Here an attempt is therefore made to describe the relationship between the total quantity produced and the marketable surplus through a suitable empirical relationship. For this purpose, a number of hypothetical models, namely linear, quadratic, Cobb-Douglas and square root functions were fitted. After models were fitted, the choice of model was based on the basis of two criteria namely (a) the value of the coefficient of multiple correlation and the significance of the regression coefficients and (b) the ability of the function to provide economically meaningful results. The results of the above studies are discussed below.

Results

The results of the various models fitted are given in table 2 below.

Table 2

Values of Intercept, Regression Coefficient and Multiple Correlation for Various models

	Linear	Quadratic	Cobb-Douglas	Square Root
	$Y=a+bx$	$Y=a+bx+cx^2$	$Y=ax^b$	$Y=a+b\sqrt{x}+cx$
Intercept 'a'	−48.02	−105.50	0.03	−128.45
Regression coefficient 'b'	0.42^{**}	0.60^{**}	1.37^{**}	7.07^{**}
Multiple correlation 'R^2'	0.68	0.72	0.79	0.68

** Significant at 1 percent level.

In the above table Y denotes the marketable surplus (in Kg) while X denotes the total production of paddy (in Kg).

The above results show that the value of R^2 was 0.79 for Cobb-Douglas function and 0.70 in the case of linear and quadratic functions. In case of quadratic function the coefficient of the square term was not significant and as such the quadratic function could not be considered superior to linear function. The value of R^2 being maximum for Cobb-Douglas function indicates the superority of the function over other functions from statistical point of view. Further the value of 'b', which is also the elasticity of sale of production is 1.37 which remains, however, constant at all levels of production. The value of elasticity being more than unity suggests that the average marginal propensity to sale will increase with the increase in production. This behaviour of the marketable surplus at different levels of output appears to be quite realistic and hence this function appears to have satisfied both criteria laid down earlier for the choice of the suitable function to describe the empirical relationship between marketable surplus and total production. The detailed study for working out marginal and average propensities to sell with respect to output at different levels was made. The results obtained are given in table 3.

From the table it can be seen that the average propensities of sale at different levels of outpul increase with the increase in production. This value approaches asymptotically to unity indicating thereby that at a very high level of production the cultivator would sell out a large quantity of the produce after keeping the normal requirement for seed and own consumption. The examination of marginal propensities suggests that at every unit increase in production at different levels the marketable surplus is different and also its proportion increases with the increases in production. It can be seen that at a higher level like 70 quintals if there is an increase in production of 100 Kg increase in marketable surplus will be of the order of 103 Kg. suggesting thereby that the cultivator would not only sell out the additional produce but would also sell from his own stock. Thus the results suggest that the small cultivator are not sensitive to sale for increase in production as compared to their counterparts belonging to higher holding size-groups.

Summary and Conclusions

Paddy occupies an important place in the economy of Shahabad District. Any increase or decrease in the area or production of paddy has a considerable effect on its economy. In view of this the present study was attempted with the following objectives :—

(i) The pattern of disposal of paddy

and

(ii) the nature of relationship between the marketable surplus and production of paddy.

For the purpose of this study the data collected under the IADP Assessment Surveys in Shahabad District (Bihar) was utilised. The data regarding production and disposal of paddy were available for 960 cultivators.

The study of the pattern of disposal has indicated that the marketable surplus was mainly concentrated in the hands of large farmers who form minority in number. The proportion of total production towards consumption was found to be decreasing with the increase in holding size.

Various hypothetical models between the marketable surplus and the total production were fitted. It was found that Cobb-Douglas model satisfied all criteria suggested for the choice of a suitable model. On the average about 80 per cent of the variation in the marketable surplus was explained by this model.

The study of elasticity of sale indicated that the large farmers are prone to sell more when there is an increase in production as compared to small farmers. It appears that small farmers consume more when there is an increase in production in their holdings.

The study indicates that marketable surplus is functionally related to total production. It was observed that bigger farmers had a tendency to sell relatively large quantities of paddy per unit of output. Thus land reforms and other policies of Government which are intended to reduce the size of holdings might have a deteriorating impact on total marketable surplus. This reduction in holding size has to be compensated by other means of accelerating output on small holdings. This does not, however, imply that we are against possible land reforms.

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Table 1 : Percentage cultivated area, pattern of disposal and distribution of marketable surplus in different size-groups of holdings

Holding size group	Percentage cultivated area	Marketable surplus	Quantity consumed	Quantity set apart for seed	Quantity given as farm wages	Quantity paid to land owner as rent	Other disposals	Distribution of marketable surplus (per cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Very small	2 (2)	6	71	6	3	13	1	1 (1)
Small	10 (12)	22	57	6	6	7	2	9 (10)
Medium	23 (35)	27	54	6	8	3	2	22 (32)
Large	65 (100)	41	40	6	10	2	1	68 (100)
Pooled	100	33	48	9	8	4	1	100

Note : Figures in brackets in Cols. 2 and 7 denote the cumulative percentage.

Table 3 : Estimated Production, Marketable Surplus and Propensity to Sell

Production (x) in Kg.	Marketable surplus (Y) in Kg.	Average Propensity to sell $\left(\frac{Y}{X}\right)^*$	Marginal propensity to sell $\left(b^*.\frac{Y}{X}\right)$
(1)	(2)	(3)	(4)
500	142	0.2840	0.3891
800	271	0.3388	0.4942
1000	359	0.3590	0.4918
1500	640	0.4267	0.5846
2000	952	0.4760	0.6521
2500	1288	0.5152	0.7058
3500	2043	0.5837	0.7997
4000	2453	0.6133	0.8402
5000	3331	0.6662	0.9127
6000	4276	0.7126	0.9763
7000	5281	0.7544	1.0335
8000	6340	0.7925	1.0857
9000	7446	0.8273	1.1334
10000	8608	0.8608	1.1793

* Value of $b=1.37$ as obtained in Cobb-Douglas function given in Table 2.

References

1. G. Parthasarathy and B. V. Subba Rao, "Production and Marketed Surplus of Rice in the Deltas of the South," Agricultural Situation of India, Vol. XIX, No. 8, November, 1964, pp. 721-725.
2. P. V. G. K. Rao, "Marketed Surplus and Agricultural Production—A case study of a village in U P., "Agricultural Situation of India", Vol. XX, No. 7, October, 1965, pp. 567-575.
3. Raj Krishna, "The Marketable Surplus Function for a Subsistence Crop : An Analysis with Indian Data," The Economic Weekly, Vol. XVII, Nos. 5-7, Annual Number, February, 1965, pp. 309-320.
4. P. N. Bhargava and V. S. Rustogi, "A Note on the Study of Marketable Surplus of Paddy in Burdwan District," India Journal of Agricultural Economics, Vol. XXVII, No. 3, July-September, 1972.
5. C. Radhakrishna Rao : Advanced Statistical Methods in Bio-metric Research, John Wiley & Sons, New York and London, 1952.

Estimated OPEC Oil Revenues and GNP

	Population (million)	Oil revenues (million U.S. dollars)		Non-oil exports	GNP per capita[2] (U.S. dollars)	
Country	1973[1]	1973	1974	1973	1973	1974
Rich oil countries	11.2	10,600	40,300	683		
Saudi Arabia	7.8	5,100	20,000		980	2.900
Kuwait	1.0	1,900	7,000		4,100	8,500
Qatar	0.2	400	1,600	577	3,300	>10,000
Abu Dhabi[3]	0.1	900	4,100		9,000	>10,000
Libya	2.1	2,300	7,600	106	3,000	5,800
Middle-income oil countries	75.2	9,500	39,700	2,388		
Iran	31.2	4,100	17,400	864	520	940
Venezuela	11.2	2,800	10,600	1,232	1,150	1,850
Iraq	10.4	1,500	6 800	22	430	930
Algeria	15.4	900	3,700	270	350	530
Ecuador	6-5	100	800	n.a.	320	420
Gabon	0.5	100	400	n,a.	900	1,540
Low-income oil countries	183.4	2,900	10,000	2,210		
Indonesia	124.0	900	3,000	1,923	80	100
Nigeria	59.4	2,000	7,000	287	150	230
Grand total	269.8	22,000	90,000	5,281		

1 Population figures extrapolated from 1971 data as shown in World Bank Atlas.

2 GNP figures were estimated on the basis of both oil revenues and non-oil productive activities.

3 Member of the United Arab Emirates.

Data : OECD

The Need for a Rural-Oriented Employment-Promotion Policy for India

B. B. Kanavi and N. G. Chachadi*

The employment promotion for economic and social development focuses on the determination of approaches designed to assure the full quantitative and qualitative participation of working age individuals in the production of goods and services. But the problem of employment promotion was given a secondary importance during the Five Year Plans. Our planners having the presumption that the strategy of accelerated rate of growth in the economy would, by and large, take care of the problem of unemployment too this psychology made them to give a secondary role to employment problem. In the First Five Year Plan they simply talked of increasing employment opportunities and raising the living standard of workers. The Second Five Year Plan accepted full employment as its objective. It called for complete eradication of unemployment within ten years. But it did not take any bold step in this direction. The Third Plan made a statement of expanding employment opportunities. For this it introduced rural Manpower Programme to provide 100 days employment in rural areas in slack season. Again the Fourth Plan dropped the idea of programmes like Rural Manpower Programmes and it made a vague of the statement that the main objective of the plan was to create more employment opportunities in both rural and urban centres. Even the Approach paper to Fitth Plan does not make any headway in this direction of employment promotion. The main reason for this kind of negligence of the employment problem is their firm belief in the fact that if reasonable growth rate was achieved, employment would take care of itself. Moreover, whatever little importance they gave for employment problem is completely misunderstood to mean only creating more jobs but not of increasing productivity of the workers. Our contention of employment promotion highlights not only job creation but also increasing the productivity of workers. This not only helps in achieving high growth rate but also improving the living standards of the workers.

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Anyhow the step-motherly treatment of the employment objective has made the situation quite worse. As a result now the problem of unemployment has assumed a character and reached a proportion which is threatening the very fabric of the economic system. However, now it is increasingly felt by the academicians that employment should become a primary objective of planning and not a secondary one. The two basic objectives of the Fifth Plan as set out in the Approach paper are "Removal of Poverty" and "Attainmeut of Self-reliance." Here, unemployment problem should not be isolated from this two objectives. By creating gainful opportunities for work and increasing the productivity the twin problems can be simultaneously solved. This calls for the identification of the individuals who fall under our observation. First, there are *subsistence workers* (agricultural labourers) who comprise about 70% of working age population. Secondly, there are some workers who move into the *wage sector* momentarily in slack season and then return to the subsistence sector in busy season. Thirdly, there are unemployed individuals who have migrated from rural areas to the urban areas permanently. Lastly, there are others who are originally urban dwellers and are unemployed.

Here employment promotion is concerned not only with the problem of finding work but also with the attainment of high productivity levels. Now we shall observe the existing impediments to find work and increase output per worker. There is a popular tendency among the planners as well as policy makers in our country who understood the employment problem in terms of creation of jobs. But our task here is not that of job creation, rather it is the productivity of subsistence workers who comprise a vast majority of workers. Those who state the employment promotion problem in terms of job creation tend to place more emphasis on urban development as the approach to solving the problem and thereby enhance the national development. But for us the best approach to the employment promotion problem is integrated rural development,

The important aspects of employment promotion problem fall under the following heads :

(1) Demography

The prominant demographic feature of India includes high growth rates, high proportion of young people, dominance of subsistence sector and large scale rural-urban migration.

(a) High growth rates : The rate of population growth is 2.4 per cent per annum. This high growth rate places greater pressure on the optimum utilisation of manpower resources in the country. When available manpower is not fully utilised the growth rate will be low. Then the economy will become poorer and backward. Therefore to achieve high output levels, labour must be used fully and efficiently.

(b) High proportion of young people : Another striking demographic feature of our country is that a very large proportion of people is young. According to 1961 census 40% of total population fall under 0—14 age group (i.e. young people), 48% under 15 to 49 age group and the remaining 12% above the age of 50.

There are two implications of this preponderance of young persons (i) they constitute a high potential labour force, and (ii) they constitute a high dependency ratio. High potential labour force means the presure for future employment creation is great. There are also pressures on the development of educational and training systems. Secondly, the large dependency ratio results into low undernutrition, ill health, low efficiency, low expectation of life, etc. Sometimes it may also lead to serious social consequences.

(c) Dominance of subsistence sector : Urbanisation has not taken place on a large scale in our country. According to 1971 Census only 20% of total population is in urban and remaining 80% in rural areas. The main occupation of the people living in rural areas is agriculture. The employment promotion problem facing subsistence workers is not that of employment creation rather it is one of manpower utilisation. That means in subsistence sector we find the existence of disguised unemployment and underemployment whose productivity is very low. Here it is the optimum utilisation of this surplus rural manpower which plays a vital role in increasing productivity of workers. No doubt the use of modern technology in agriculture has lead to increase in agricultural productivity. Along with the use of these modern tools, there is a necessity of improving the skill and efficiency of human element also. Because labour is an important input in agriculture and unless his skill is improved, to that extent the total output will be less. Such a situation places greater stress on the development of educational and training programmes in rural areas. If such increase in productivity levels is accompanied by proportionate wage-rise automatically rural areas will become more attractive for those individuals who are influenced largely by wages in their migration decision-making.

(d) The Rural-Urban Migration : In recent year there is increasing rural-urban migration, although nearly 80% of the total population is still in rural areas.

The rural-urban drift is a movement of people from rural areas to unfamiliar urban areas. In urban areas due to increased cost of living they are faced to make serious attempts in finding out some income earning opportunities. But, because of their low skill and the tight employment market it becomes difficult for them to get jobs. In such a helpless atmosphere, they are forced to indulge in anti-social and illegal activities in urban areas.

(2) Economic Structure

It is a well known fact that India is predominantly an agricultural country, which accounts for nearly half of the national income of our country. Another important economic feature is its heavy reliance on exports of *primary products* like tea, coffee, tobacco, oilseeds, jute, mineral ores, etc. Employment promotion in this subsistence sector will help increase agricultural output and thus export of these products. In this way, India can earn more and more foreign exchange and thus finance the import of capital goods for industrialisation.

(3) Income Distribution

It is not at all surprising to find that only a few persons share the bulk of the income. Most people live under subsistence conditions. Thus they do not participate in income sharing in any way. Those people who are engaged mainly in income generating activities are relatively few, residing in urban areas. Therefore there is undesirable unequal distribution of income. Employment promotion in terms of productivity increases in rural areas would definitely lead to a fair distribution of national income. Presently rural incomes are far less than urban incomes and now with rising productivity of farmers and rural workers it will result in equitable income distribution.

(4) Manpower and Employment

The most serious employment promotion problem facing India is not that of finding jobs for people. Rather it is one of raising productivity of vast majority of people engaged in subsistence sector. Now the average productivity of agricultural labour is very low. According to a study made by Baljit Singh the average productivity per worker engaged in agriculture per year is $ 105 as against $ 2000 in England and $ 2400 in U.S.A. Thus there is an urgent necessity for raising the productivity of subsistence worker. But the present tendency among planners is to over emphasise the unemployment situation in urban areas which contributes only a small aspect of the nation-wide problem. The entire problem, most of which exists in rural areas, is important. To say about the difficulty of tackling the problem because of imprecision in estimating the extent of unemployment and underemployment is merely a plea for escape from the responsibility which in future may endanger the fabric of the economy. Our contention here is that there is a need to take suitable measures to ensure the optimum utilisation of surplus rural manpower. Here it is the sole responsibility of the government to take action in this direction. In urban centres where the problem is a meagre one, we find there the co-existence of both public and private sectors. Thus there are ample opportunities in these two sectors. But unlike that we find that private and public sectors do not exist in rural subsistence sector for evening employment opportunities. Though some public activities are undertaken by government such as minor irrigation, road construction, rural electrification, water supply, land levelling, etc. as measures for employment they are purely of short term nature. Secondly, in the case of urban centres there is a guarantee of employment, but not so in the case of rural areas. Thirdly wages are flexible only in upward direction in urban areas but they are flexible even in downward direction in rural areas. Such uncertain wage fluctuations in rural areas will kill the incentive and efficiency of workers. Lastly, in rural areas there is no competition among the employers which keeps the wages down. Thus in rural areas there is a great necessity of government intervention to protect the interests of workers. The present integrated rural development programmes such as SFDA, MFDA, the Crash Programme for Rural Employment, etc. will provide only short-term employment to rural workers. In fact there is urgency of providing some secured jobs to these rural unemployed. Now there are good opportunities in rural areas to start power-based industries as many villages are now electrified. At the same time some agricultural processing industries can be favourably started in rural areas. Such measures will provide secured jobs to the unemployed. And for under-employed people it looks quite feasible to start season-biased and rural-demand-oriented-goods producing activities.

(5) Industrial Relations

It is because of the wrong approach to the employment promotion problem that the industrial relations have become difficult. The government has continued to focus on the urban sector in which smaller aspect of the problem exists. The Ministry of Labour and INTUC have organised to handle the situations mainly of the urban workers. And due to union pressures urban wages are rising leading to increased rural urban migration and urban unemployment becomes more serious.

(6) Education and Training

The present system of mass education founded by the British rulers which was mainly geared towards producing political administrators is completely irrelevant to the present developmental needs. Although there is a growing awareness of the relevance of changing educational and training system mainly oriented towards socio-economic development, there seems to be considerable difficulty in parting with the old irrelevant system.

In the drive to develop relevant educational and training system, one finds the problem relating to the question of perspective occupational catagories. Because a person working as an agricultural worker in peak agricultural season may work is small scale industry or in transport sector during slack seasons. Therefore the question of occupational catagories should be viewed in terms of the order of priority for skills which contribute to the economic and social development of the country. The efficient manpower planning would delineate the order of priority of skills, the number of persons required and the time sequence for the production of individuals with different skills. In brief we can say, a proper and scientific manpower planning is essential to avoid the present muddled situation in the educational sphere.

(7) Development Planning

The main objective of development planning in India is to bring about rapid economic progress. However, there exists no action-oriented manpower plan. Plans are in existence, but they serve mainly as broad guidelines bearing no programme for action.

Government will agree that human resources are the most important resources of production. While it has a plan of action for mobilising financial resources for the public sector, no such action-oriented plan is there for mobilising human resources. Only a few months back, the government attempted to mobilise public savings through Ordinances to curb inflation. However, there is no such plan of action to mobilise the human resources for raising output by creating gainful opportunities and thus controlling inflation. Perhaps the fundamental explanation for the negligence is the lack of proper implementation of the plans. Government says that it wants rapid economic development but it lacks political will and determination to implement its plan effectively.

Aporoaches to Solutions

The crux of the fundamental employment promotion problem in India is the relatively little emphasis placed on raising the productivity of farm workers who comprise the vast majority of the working age population. The approaches include suggestions for roles to be assigned to different entities like the workers organisations and the Government.

(I) The Role of Workers Organisations

The interests of the workers in rural areas can be protected and promoted through trade unions, labour co-operative and agricultural co-operatives.

Trade union activity is very much limited to business and industrial activity in urban areas. Trade Union movement has yet to cover the rural working population. Efforts must now be made to enlarge their scope to cover these rural workers. While doing so, care must be taken to see that not only workers in rural areas are covered by trade union movement but also that these trade unions while promoting the interests of workers must see that the productivity of workers is also enhanced.

It is also possible to organise labour co-operatives in large number to enable the workers to take up rural construction works like the school, building, well digging, construction of rural roads, etc. so that the employment potential of rural economic activity can be enlarged.

The agricultural cooperatives being rural institutions are more suited to increase productivity of farm workers as well as their incomes. These cooperatives should try to fix wages according to the productivity. Automatically the wages offered by these cooperatives will be higher than the wages offered by individual farmers. This is a kind of competition in rural areas with other farmers who pay lower wages. Now they are forced to pay higher wages to get labourers. This kind of tying of wages with productivity will encourage the workers to work hard to increase their wages. Such an attempt will improve the working conditions of workers as well as agricultural production. Thus the number of these co-operatives should be increased in each village to maintain wages at a fairly high level.

(2) The Role of Government

If at all the government thinks of raising the living standard of the people, if should focus its attention more on integrated rural development by providing additional educational, training and financial help to it. What we need is action plans not mere paper plans. To make this integrated Rural Development Programme effective there is a necessity of change in the attitudes of decision-makers. They should realise that more people live in the rural areas and their concern is to protect these vast number of people. In the absence of such a change in attitude only the few in urban areas will continue to reap the bulk of the benefits from the economy, which itself is growing at a slow rate.

To conclude, it can be pointed out that while there is a need to enhance employment opportunities both in urban and rural areas, employment policies hereafter must be more and more biased towards rural areas. At the same time sufficient care must be taken to promote productivity of the worker and thereby raise the tempo of economic development which in turn will create more employment opportunities.

Budgetary Policy in a Welfare State—The Recent New Zealand Experience

Peter Henderson*

The return to office of the New Zealand Labour Party in November 1972 after a long period in opposition might have been expected to result in a major change in economic policies generally and in welfare policy in particular. The purpose of this short paper is to evaluate whether significantly different policies have been pursued by the Labour administration since its accession to power on the basis of the two budgetary statements made by the Minister of Finance in June 1973 and May 1974. Some reference will be made to policies pursued by the previous National Government and also brief mention of the history of social welfare legislation in New Zealand.

New Zealand has a long tradition of state intervention in the working of the economy and also in the field of welfare legislation. The activities of Sir Julius Vogel in the 1870's, who, as Prime Minister pursued a vigorus policy of borrowing to finance state construction projects is a case in point. By the end of the 19th century New Zealand had established old age pensions and a very comprehensive system of industrial relations organised through compulsory conciliation and arbitration. However the pattern of present welfare provision in New Zealand was established by the first Labour Government (elected in 1935). It was this administration and its successors which established family benefits, provided the free health service and extended ths provision for the unemployed and disabled. That the role of the state as provider of basic social services is accepted by both political parties can be inferred from Table 1.

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Table I

Government Expenditure in N. *Z*. 1950-1971

Year Ended 31 March	Total Social Services Expenditure as Percentage of National Income		Social Services Expenditure less Education as percentage of National Income	
	National Income	Total Government Expenditure	National Income	Total Government Expenditure
	%	%	%	%
1950	13.6	54.7	11.1	44.5
1951	11.7	57.2	9.4	46.1
1952	12.7	52.8	10.2	42.5
1953	13.4	55.7	10.6	44.0
1954	13.1	56.6	10.2	44.1
1955	12.6	58.3	9.8	45.5
1956	12.9	58.4	13.0	46.0
1957	13.2	58.9	10.1	45.2
1958	13.4	59.8	10.3	45.8
1959	14.2	60.9	11.0	47.2
1960	15.0	62.5	11.8	49.0
1961	15.0	62.5	11.7	48.6
1962	15.3	63.4	11.8	49.0
1963	14.9	63.0	11.4	48.0
1964	14.6	63.4	11.1	47.9
1965	14.3	62.4	10.6	46.2
1966	14.2	61.6	10.4	45.3
1967	14.8	61.8	10.7	44.9
1968	15.2	64.0	10.9	45.9
1969	15.0	62.9	10.7	44.7
1970	15.1	62.7	10.7	44.4
1971	15.5	62.5	10.6	42.6

Source : N. Z. Year Book 1973.

The expenditure referred to in Table 1 includes state spending on pensions, health, education and ancillary social services such as meals for the aged and rehabilitation work. Although there appears to be a slight trend upwards over the period surveyed in the table, there is no indication that the years of above average spending are connected with the political label of the party in power. Thus 1950 was a year of Labour government. 1951-1956 was a period of National government, 1957-1960 was a Labour administration and

1960-1971 was again a period of National government. There is a prima facie case for believing that the broad patterns of welfare expenditure and its absolute size are accepted by both major parties in New Zealand.

The Recent Experience

In introducing his first budget statement the Hon. W. E. Rowling, Minister of Finance, commented :

> "A Budget is not just a statement of the Government's financial and economic policy. It is even more a practical expression of the Government's social and political policy."

Table II summaries the pattern of Government expenditure on a percentage basis of the four financial years to March 1975. The last year being an estimated expenditure given in the 1974 Budget statement.

Table II
Pattern of Government Expenditure in New Zealand
1971/2—1974/5
(March Years)

	1971/2	1972/3	1973/4	1974/5 (Est.
Administration	8.6%	8.6%	11,3%	10.1%
Foreign Relations	7.2%	7.0%	6.7%	6.7%
Transport & Development	15.6%	15.8%	12.1%	14.1%
Education	18.0%	17.0%	16-7%	16.3%
Health & Social Services	36.7%	39.2%	39.8%	39.7%
Miscellaneous	13.9%	12.4%	13.4%	13.3%
Total (NZ $ million)	1862.3	2219.3	2633.2	3104.0

Source : N. Z. Budgets 1973, 1974.

At the level of these broad aggregates there is little evidence that the pattern of expenditure aimed at by the Labour cabinet is significantly different from that of its National predecessor. Comparing 1973/4 and 1974/5 with the last full year of National administration 1971/2 there has been a tendency for the share of expenditure on social services (mainly pensions and health) to rise but this has been offset by a relative decline in the share of expenditure going to education. The money values at the foot of the table represent the total expenditure (net) by Government in each of the four years uncorrected for changes in the price level. This point is of some importance since New Zealand, in common with most other nations has been undergoing a period of serious and prolonged inflation. Table II (a) breaks down certain of the figures in table II so as to show the crude changes in spending on different types of welfare.

Table II (a)
Year to Year Changes in Social Welfare Expenditure

	1971/2	1972/3	1973/4	1974/5
Education		+12.5%	+16.1%	+14.7%
Health		+17.5%	+16.9%	+16.4%
Social Welfare (Mainly Cash Benefits)		+34.7%	+21.8%	+12.6%

Table II (a) gives an indication of governmental priorities within the total welfare budget. Thus deflating the year to year changes in the consumer price index (a rough guide admittedly) the real change in spending on the items listed in table II (a) is much smaller than appears at first sight, particularly in the later years when inflation accelerated. Thus for the year ended March 1972, the rate of inflation was approximately 6%, the following year 10% and the year ended March 1974 around 14%. Thus the real increases in expenditure on health and education are quite small despite Government assertions that both these categories are high on their list of priorities. On the other hand spending on cash benefits of various kinds (e.g. pensions, unemployment benefit) show the highest rate of increase for the broad categories of welfare spending. This is understandable in an inflationary situation except that the increases which have actually occurred have more than kept up with the increase in the price level (with one exception). Whether much credence can be given to the projected increase of 12.6% for the coming year in this category depends entirely on the rate of inflation. The Government has pledged itself to maintain cash benefits against rises in the price level. However the break down given in table II (a) does indicate that the Government ranks spending on non-cash welfare provision as secondary to the maintenance of money benefits.

Also hidden in the aggregated figures is a rather curious item. The previous Minister of Finance the Hon. R. Muldoon in his last year of office changed drastically the method of providing family allowances. The previous system had been that families received both a weekly payment for each child plus an income tax allowance for each child.

The National government abolished the income tax allowance and doubled the weekly payment to three dollars (FZ). This move can be defended on egalitarian grounds since low income families benefited less from the tax concession than high incomé families, particularly low income families with several children. The direct implication being that the family allowance was to be regarded as a major component of family income and adjusted upwards with other welfare payments. In fact this has not been done by the Labour administration and neither the 1973 nor the 1974 budget statements mention this particular welfare payment at all. In the light of the present Government's professed egalitarianism this seems a curious omission.

Financing the Government's Expenditure

Table III summarises the sources of Government finance for the same years as laid out in Table II.

Table III
Financing of Government Expenditure 1971/5—1974/5
(March years)

Taxation	1971/2	1972/3	1973/4	1974/5 (Est.
Income Tax	63.3%	59.2%	64.5%	67.6%
Customs, Sales, Beer	18.1%	17.2%	17.2%	16.7%
Highways	4.8%	4.3%	3.9%	3.4%
Others taxes	6.4%	6.2%	5.4%	4.2%
Misc. Receipts	4.5%	3.9%	—	3.8%
Borrowing	3.9%	9.2%	9.2%	4.3%

Source : N. Z. Budgets 1973. 1974.

As can be seen from Table III the major difference between the previous administration and the present in Government finance is to be found in the Labour Government's reliance on the progressive income tax relative to its National predecessor. In fact the 1973' Budget announced increases in income tax rates to take effect from 1st April 1974. In addition certain exemptions (applicable mainly to professional workers) were withdrawn. The net effect of these is to raise the marginal tax rate on incomes over 10,000 dollars (NZ) a year to 50% or 50 cents in the dollar. A common feature of progressive taxation systems during the time of inflation is to more than proportionately increase the taxation receipts. It is difficult to know how far the estimated receipts for the year ended March 1975 take inflation into account but it is quite clear that the effect of the Government's taxing and spending policy is shifting spending power from the above average to below average income groups. Whilst high and early tax rates are traditional in New Zealand there are some indications that the current tax rates are pushing near to being counter-productive in terms of their effect on the willingness to supply labour at a margin. Thus an overtime tax rebate was introduced recently to encourage workers to increase overtime and reduce absenteeism which had been increasing. Early reports from the building industry indicate that this concession has had a beneficial effect but the concession has been challenged on the grounds of equity between groups which can work overtime and those on fixed weekly or monthly salaries.

Anti-Inflationary Policy

The record of anti-inflationary policies in New Zealand in recent years is a confused one. Critics of both parties have maintained that the various wage and price controls that have been tried have been largely nullified by the acceptance of both political groups to run the economy at full employment with a high level of public spending. (See Table 1). In the post-war period it is doubtful if any country in the world has had such a high level of long-term employment. For much of the period registered unemployment has been a fraction of 1% of the total labour force and notified vacancies are a better measure of the demand for labour in the economy. As a result of serious balance of payments difficulties in 1966/7 the then National government introduced a series of deflationary measures. By mid-1968 unemployment had passed 10,000 and the Government's decline in popularity was largely attributed to this fact. The present Labour government have stressed in their Budget statements their determination to maintain full employment as a key variable in their overall economic policy. One of the methods chosen has been to allow a very high rate of growth in the secondary sector (building and manufacturing) over the past eighteen months. According to official figures manufacturing in the year to March 1974 grew at an unprecedented rate of 9% A large part of this growth was financed by running down the very high levels of foreign exchange holdings which the Government partly inherited from their National predecessors. In August 1973 the official holdings of overseas reserves stood at something slightly in excess of a thousand million dollars (NZ). As a result of the very high level of activity sustained since then experts predict a balance of payments deficit of about 400 million dollars (NZ) by March 1975. The Government have already announced their intention to resume borrowing abroad and the possibility of a devaluation has been raised. The very large turn around in the balance of payments situation is highlighted by the nature of the New Zealand economy where the heavily protected manufacturing industries are largely dependent on farming earnings for their imports of inputs and themselves hardly generate any export surplus. Also high overseas earnings transmit inflationary pressure by increasing the supply of money within New Zealand dollars. Hence the Government's policies have tended to produce both strong excess demand (through a high level of welfare spending and refusal to import significant quantities of finished goods) and cost-push pressures in the labour markets allied to wage-drift phenomena. Add to this rising import prices and the factors making for a classical inflationary spiral are clearly present.

Conclusion

This brief discussion of New Zealand's recent budgetary policies is not meant to be exhaustive. It does claim however to show that in recent years at least the policies pursued by the two main parties have not been as different as their election manifestos would indicate. Observable differences appear to occur more in how government expenditure is to be financed than in the pattern of expenditure itself. This is explicable since the establishment of a pattern of state welfare tends to create political constraints which bind politicians in the scope they have for radical change in that pattern. Similarly the stress laid in New Zealand on full employment as the paramount aim of economic policy must limit any government in its ability to control inflationary pressures. Both parties accept the need for a narrow income distribution brought about by high marginal tax rates. The issue here is one of degree but an import ont one nonetheless. At this level the present Government appear markedly more egalitarian than their predecessors although by world standards both parties clearly are heavily committed to the ideology of the welfare state.

(Continued from page 8)

cent. Since imports increased even faster, the ratio of reserves to imports fell slightly.

In 1974 the trade balance of the non-oil producing developing countries vis-a-vis the OPEC countries may have deteriorated by about $10 billion, part of which may be financed by drawing on reserves. However, although the developing countries' reserves have increased by some $1[illegible] billion over 1972 and 1973, the reserve gains have been uneven and, for some of the countries affected by the oil price rise, the scope for running down reserves is limited, while it will be difficult for developing countries to raise their exports to the OECD area. OECD estimates suggest that the terms of trade between non-oil primary products and manufactured products and to a lesser extent, between non-oil developing countries and industrial countries should continue to move in favour of the former during 1974. However, by the first half of 1975 there may be a turnaronnd in favour of exporters of manufactured products and thus against many developing countries.*

* Source : I. M. F.

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Plea for a Closed Economy

Currently it is on very much propagation that the progressive economic crisis in underdeveloped countries is due to international factors over which they have no control. One country, Bangla Desh, has attributed its economic ills to global inflation, international monetary crisis and natural calamities, further accentuated by indiscipline and aversion of some sections of the productive forces to work. Besides, the increased prices of imported food and industrial materials had not been matched by prices of exports. It may not be beyond reason to hold that the ruling party had made use of these as a cover to scrape democracy for assuming totalitarian power. India has not gone to that length as yet, but it is oftener than not propagated by the ruling party, spearheaded by the Prime Minister herself, that the shortages of food, fertiliser, and oil and the mess in international financial system are at the root of the country's crisis. So down comes the counsel that the people should endure the distress patiently in a spirit of cooperation. But the people, hungry and angry as they are, refuse to accept this philosophy of internationalization of causes of their distress as is evidenced by the popular upsurge in Jayaprakash movement.

International factors provide half-truth for interpretation of the economic crisis of the underdeveloped countries. The world is one and not two as is held by the communists or visioned by them. Any important scientific, political or economic reaction in any part of the world, especially in a big country or in a country holding a deterrent input (as oil), is bound to react upon the science and society of all other countries, communist countries including. The world may be less reactive and more receptive if all the countries work in close and mutual understanding. This is the vital norm. Any deviation of a powerful country or a group of countries holding deterrents from this exacting norm may induce regional to total chaos leading to total destruction of the too delicate ties of the political unity of the world. The five times rise in oil prices in four years is an instance of what may come out of such deviation. This is not a cause in itself but an effect of over-politics with and over-bearingness of the Arab countries. The world-wide food and fertilizer shortages expose the power politics of the super powers, indolence of the underdeveloped countries and the general complacency of all the countries about the nature's food cycle. The crisis in international financial system is a revelation of the weakness of the idea of absoluteness of a currency developed in exuberance of capitalist expectation, although each and every currency is fed by its internal economy, which is not itself absolute. The economy of a country or for that matter of the world, which is being an organic whole, has necessarily to face chain reactions of a reaction in export-import. For there is no item which is not both an input and an output at two certain different points of use or no country which is not both a seller and a buyer.

All this is known to all. The point is what to do if there is misbehaviour in world economy, and if it is of persistent character inducted by the countries holding the deterrents. This is no longer a hypothesis but a reality by now. The answer to this reality, without alternative, is to live in a closed economy. This prescription is not an aggression but in self-defence. China provides an excellent example of it as was evident on the withdrawal of the Soviet cooperation from that country. Its frontiers were sealed by it and simultaneously it became tremendously enriched by the harness of "national energy", the true key of building up a self-reliant economy. India however is not under any compulsion or ideological obligation and hence with no such rigidity or sensitivity it can enter into a phase of closed economy with more confidence, Our plans aim at "self-reliance", but that is through liberal imports, grants and aid, i.e. through the reliance and dependence on the deterrent holders, which is a great contradiction. Now in this hard world it should be resolved by taking for granted that the resources of the outside world are denied to us, at least very largely and strategically. This will not cause a disadvantage. For we have a vast population and immense resources and by now advancement in science and technology. To all this will be added the "national energy". On the other side, the imported economic variables, fluctuations, and inflation will be weeded out making the growth factors confident and progressive. The greatest gain will be the breaking of the unwritten pact of non-proliferation of deterrents of a few countries. The logic of "non-proliferation" cannot be knocked down by more dependence on the builders of it but by a breakaway from it for a closed economy, then again for a closer and one world economy. This is the road to economic and social transcendence.

Review

Problems of Development of Smaller Countries, Y. P. Pant, Oxford and IBH Publishers Co, Calcutta, New Delhi and Bombay, 1974, Price Rs. 35.00.

"The purpose of the book, writes Dr Pant, "is to produce a broad understanding to the people who are inhabiting the underdeveloped parts of the world, particularly the least developed and smaller countries in relation to the types of problems which are facing their development process, and to offer some suggestions to the solution of these problems in the years to come."

The "types of problems", as enumerated by Dr Pant, emerge from the common structural features of the developing countries, e.g. predominance of agriculture, backwardness of infrastructure, low percentage of export trade, poor growth rates, etc. Side by side he traces the growth of industry and the private sector, revolution in social overheads and the beginning of planning. Then he runs into the measures taken by the governments for resource mobilisation largely through taxes, savings and foreign aid. His finding is that most undeveloped countries suffer from lack of "absorptive capacity", that is, they leave behind huge usable resources unutilised. He hopes that this riddle can go out "if technical assistance of the right kind was made an integral part of it, and went hand in hand, with financial assistance." But no economic riddle perhaps can be solved by any push button, as Dr Pant is inclined to think. Coming to constraints on growth he makes the size and behaviour of the market largely responsible and also the dependence on exports of primary products which is a source of both uncertain and unfavourable terms of trade. The unionism in economy also baffles many a country and he notes that it has "aggravated the difficulties of developing exporting countries in the sector of commodity trade".

Dr Pant draws on UNCTAD, GATT, and Kennedy Round trade policies in building up his observations on the growing import barriers affecting the external trade of the developing countries. Giving a full chapter on "external assistance", he dwells on at length the economies of foreign aid. He pins his faith in the viable character of the foreign aid which he expresses in unequivocal language, "The rapid formation *of capital for the accelerated growth of such countries cannot be* possible without foreign assistance, even if domestic resources are mobilized to the optimum level". He has however nowhere explained the reasons for this optimism in faith. Rather he seems to contradict himself when he goes on to say on the ineffectiveness of foreign aid programmes that "The grounds for this concern lie in the inadequacy of measures taken by developing countries to bring about essential reforms...". As a result, instead of an accelarated growth most developing countries are sitting on "debt explosion".

There are the special problems for the "land-locked" countries, i.e. whose access to international transport is indirect ; which poses a great disadvantage to them and causes problems for the transit countries. Per capita GNP of such a country is very much low, no doubt for this added disadvantage. Thus Afganistan has a per capita GNP of $ 88, Laos $ 73, and Nepal $ 80. Switzerland and Austria are exceptions to this. Dr Pant seeks resolution of this geographical disadvantage of the land-locked countries by reduction of constraints imposed on them by the transit countries. Additionally, he prescribes a "strategy" for these countries.

Although conscious, as he is, about the ills of unionism in economy Dr Pant favours "regional cooperation" "to offset discontinuities imposed by natural frontiers and thus increasing trade within the region" and has made out cases for both Asia and Africa pointing at the same time a number of insurmountable difficulties to give a shape to it.

In the last chapter he develops his idea of "general strategy". It is "general" subject to concession to "different stages of development among the developing countries themselves originating from distinctive features such as, the size of population, topography, national income, and other factor endowments." He proceeds to remark, "clearcut conclusions cannot be drawn for solving problems of these countries on a common basis". In spite of this wide generality the book has a great merit of its own in that it has taken in a large number of countries as "cases" for analyses and deductions making the study enlightening and provocating.

Trend of Entrepreneurship in West Bengal (1959-1970)

—A RETROSPECTIVE ANALYSIS

Swaraj Bandyopadhyay,* Swapan De* and Arup Dastidar*

Entrepreneurial activity and its development in West Bengal are recently gradually getting top priority with the State planners. Various feed-backs and encouragement programmes have been introduced by various Governmental agencies to direct and motivate the entrepreneurs of the State to gear up their phases of development. Although very few recent researches [UNESCO Publication (1962) ; H. Banerjee (1964) ; etc.] in this trend have also revealed many valuable information in the said regard. But much has not yet been stated about the wide gap betwen the projections and desires of the planners and reformers and the reality of industrial development in the State. At this level of thought, the present authors felt the necessity of exploring and projecting actual picture of the state of affairs of the entrepreneurs of West Bengal in the span of last twelve years from 1959-1970. It is sincerely hoped that the emerging picture of this paper will be very useful to the experts in this line to reorient their plans and thoughts for further fruitful moves in the said field.

The paper* is a side-track outcome of a broader analysis. The data used in this paper were actually collected for the country-wide research programme titled "Entrepreneurial Research Project" ; and the same for West Bengal were collected from the office of the Directorate of Industries, Government of West Bengal. After the implementation of the Indian Factories Act 1949, the said body of the State Government came into existence. The only reason for utilising the data from 1959 onwards to 1970 is the *completeness* of the required information to be delt with in the present paper. This period is also one of the most crucial periods for industries in West Beagal in view of the wide fluctuations observed. The data have been used in the present paper under many limitations. Hence, some differences

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or variances in the emerging figures from other published materials are obvious. The variation in the outcome of the present analysis may also be for the exclusions made in the analysis where the industry group, district, year of registration, etc., were not available. A lack in information of the data may affect in case of 1970 data,

The present paper merely attempts to give an insight to the rate of mortality and viability of the various industries which came into existence and died out during 1959-1970 in the different districts of West Bengal. It will not be out of place to mention here that it was very difficult and strenuous job to group the very scattered, crude and varied data to the frame for the stated purposes. This paper is basically a trend analysis.

Again, for the present purpose, various types of industries were broadly grouped into four categories on the basis of their nature of products. They are :—(1) Agro-based Industries ; (2) Engineering Industries ; (iii) Chemical and Intermediate Industries : and (iv) Service Industries.

Furthermore, it was thought to represent the available information on those four categories of industry groups to the sixteen (16) different districts of West Bengal. But, once again, it was found that the nature of occurrence of various industries in majority of the sixteen districts was very poor. Thus, on the basis of certain factors, three broader categories of districts were formed. The various factors considerd for the grouping are like :—Potentiality of the raw materials ; marked conditions and facilities ; availability of the skilled labour force ; communicational facilities ; etc. The proposed groups of districts are : Away from Calcutta ;* Adjacent to Calcutta ;† Calcutta.

It is very interesting to note that the above stated categories of districts have got some sort of interaction among themselves and indirectly, for some reasons or other, related with each other. This will be evident from available figures of the present analysis.

It is very worth finding to see, during the span of twelve years, i.e. from 1959-1970, the numbers of factories existed, opened and died out respectively in the three broader categories of districts (mentioned earlier) in West Bengal in the respective years. It is evident from the emerging figures in the Table I, given below, that the gross number of openings in any year within the said time period in the first category of districts is much greater than the third category of districts and rather less greater than the second category of districts.

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* Adjacent to Calcutta category includes the following districts :—Howrah (08), 24 Parganas (16) and Hooghly (07).

† Away from Calcutta category includes the following districts :—Bankura (02), Birbhum (03), Burdwan (04), Cooch Behar (05). Darjeeling (06), Jalpaiguri (09), Malda (10), Midnapur (11), Murshidabad (12), Nadia (13), Purulia (14), and West Dinajpur (15).

Table 1

Nos. of Factories Irrespective of Industry Group Existed, Started and Died Out in the Respective years

	Existing			New			Closed		
Year	I*	II**	III***	I	II	III	I	II	III
1959	1813	1399	928	93	79	45	2	6	2
1960	1927	1478	956	128	101	37	14	22	9
1961	2014	1547	979	113	19	43	26	20	20
1962	2130	1640	1006	164	132	44	48	39	17
1963	2242	1733	1031	147	119	33	35	26	8
1964	2317	1845	1041	146	147	24	71	35	14
1965	2492	1962	1066	237	161	38	62	44	13
1966	2699	2014	1072	136	103	18	68	51	12
1967	2695	2052	1114	185	94	51	49	56	9
1968	2649	2015	1109	71	40	30	121	77	35
1969	2659	1999	1097	74	68	23	64	84	35
1970	2677	2029	1109	66	59	17	49	29	5

* First Category of District. ** Second Catagory of Districts.

*** Third Category of Districts.

It has also been revealed that the nett increases in the existing industries during 1959-1970 in the three categories of districts are respectively 846, 630 and 181. Hence, it may be safely said that Calcutta, the first category, showing on a rather confident picture in view of the industrial growth ; whereas, third category of districts, comprising of twelve districts, exhibiting a very poor picture in the said regard and the remaining three districts belonging to our second category of districts, have placed themselves somewhere in the middle, in comparison to the other two categories of districts, in the trend of industrial growth in West Bengal. So, a very little amount of interest to improve the situation and condition of the previously neglected districts has been shown during this time.

A glance in the New industries' data of the table I will reveal that the first category of district has a sharp rise of birth during 1962 to 1967 and in this period the highest number of industries came into existence in the year 1965. In case of the second category of districts, the number of industries had their birth in greater number during the period 1962-1965, and in the year 1965, it reached the maximum ; while in the third category of districts the industries were growing more or less in a uniform fashion. But after a shock they faced in the year 1967, they could recover from that in the very next year i,e. 1968 and then onwards i.e., 1969-1970 a decreasing trend in growing process of the industries can be observed.

Then, if look at for a while the closure information in the same table, it will be evident that the industries in the first category of district died out rapidly during the period 1964-1968. Within the said period, the industries received comparatively a little blow in the year 1967 ; but in the very next year the death rate expedited most. In case of the second category districts, the rate of deaths of industries increased year by year. But this rate has been changed drastically in the years 1968-1969. For the third category of districts the most shock period is 1968 to 1969.

The next phase—the most important and interesting part of our analysis deals with such complex problems like birth rate, death rate and nett effect respectively of the different industry groups within the three broader category of districts. In the present analysis, the birth rate (B.R.) ; the death rate (D.R.) and the nett effect have been calculated in the following way :—

$$\text{B.R.}\text{—}\frac{\text{Total no. of births of industries occurred in a given region during a given time period.}}{\text{Total no. of industries in the same region during the same time period.}} \times 100$$

$$\text{D.R.}\text{—}\frac{\text{Total no. of deaths of industries occurred in a given region during a given time period.}}{\text{Total no. of industries in the same region during the same time period.}} \times 100$$

$$\text{Nett Effect} = \text{B.R.} \sim \text{D.R.}$$

In the table no. 2.1 for the first category of districts, given below it is found that the B.R. in agro-based industries is comparatively higher in 1965 and 1967 ; but this rate sharply decreased in 1968. Incidentally it is also observed that the nett effect is negative in 1968. It is also evident from the same table that the year 1968 is a very critical year in case of engineering industries.

During this year the nett effect of the said industry group has been found negative. In case of the chemical industries 1968 was a very bad year ; but still B.R. of this industry group under discussion has been found prominently high in 1968. In the year 1969 and 1970 the services industries faced the same trouble. On the whole in Calcutta, 1965 is the year when maximum industries came into existence irrespective of industry groups and the year 1968 may be called as "shock period" for the said zone.

Table 2.1

B.R., D.R. and Nett Effect of Four Industry groups in the First Cetegory of Districts

	Agri			Engg.			Che/Int.			Ser/Oth		
Year	B.R. %	D.R. %	Nett	B.R. %	D.R. %	Nett	B.R. %	D.R. %	Nett	B.R. %	D.R. %	Nett
1959	2.45	0.00	2.45	5.75	0.16	5.59	7.71	0.22	7.49	4.13	0.00	4.13
1960	3.41	1.36	2.05	9.13	0.74	8.39	7.58	0.20	7.38	5.38	1.13	4.25
1961	4.35	2.01	2.34	7.61	1.22	6.39	5.72	1.35	4.19	3.63	0.82	2.81
1962	6.86	2.61	4.25	9.83	1.79	8.04	7.88	2.56	5.32	6.07	3.17	2.90
1963	4.70	2.51	2.19	7.33	1.89	5.44	7.30	0.87	6.43	7.18	1.54	5.64
1964	7.05	4.29	2.76	7.17	2.69	4.48	6.05	2.12	3.93	5.34	4.85	0.49
1965	8.06	2.69	5.37	10.30	2.36	7.94	10.85	3.14	7.71	10.87	2.66	8.21
1966	5.10	3.97	1.13	5.96	2.88	3.08	6.72	1.90	4.62	2.46	2.68	−0.22
1967	8.68	4.20	4.48	7.04	1.35	5.69	6.96	2.09	4.87	6.94	1.12	5.82
1968	2.95	5.63	−2.68	2.19	5.38	−3.19	2.92	3.85	−0.93	2.96	2.54	0.42
1969	4.68	2.48	2.20	3.10	2.82	0.28	2.55	2.41	0.14	1.05	1.47	−0.42
1970	2.16	1.62	0.54	2.34	2.15	0.19	3.88	1.74	2.14	0.85	1.41	−0.63

From the analysis of the B.R., D.R. and Nett effect of the second category districts in the table No. 2.2. given below, it will be found that most effectively the high birth rates of the different industry groups in the different periods are as follows :—for Agro-based industries—1963 : for Engineering—1962 ; for Chemical industries—1965 and for service industries—1964. On the whole, the most critical period for all industries in this zone was 1968-1969, where the nett effect underwent a downward trend. The D.R. was very high durirg the said period except for service industries.

It is evident from the table No. 2.3 given below for the third category of districts that the most dull and irksome period was 1968-1969 for the agro based, engineering and chemical industries whereas for service industries it was 1969-1970. In case of agro-based industries, the B. R. is observed comparatively high in the year 1967

Table 2.2

B.R., D.R. and Nett Effect of Four Industry Groups in the Second Category of Districts

	Agri			Engg.			Che/Int			Ser/Oth		
Year	B.R.	D.R.	Nett	B.R.	D.R.	Nett	B.R.	D.R.	Nett	B.R.	D.R.	Nett
	%	%		%	%		%	%		%	%	
1959	3.24	0.79	2.45	7.73	0.30	7.45	4.69	0.00	4.69	7.14	1.43	5.71
1960	2.64	1.85	0.79	9.27	1.38	7.89	9.42	1.35	8.07	4.05	2.70	1.35
1961	3.14	1.05	2.09	7.44	1.03	6.41	7.05	2.90	4.15	2,67	1.33	1.34
1962	3.85	2.85	1.00	11.08	2.77	8.31	8.76	1.59	7.17	3.95	1.31	2.64
1963	5.33	1.52	3.81	8.56	1.56	7.00	5.58	1.86	3.72	7.69	1.28	6.41
1964	3 91	0.73	3.18	9.87	2.18	7.69	9.68	2.87	6.81	10.84	3.61	7.23
1965	4.98	2.13	2.85	9.56	2.51	7.05	11.07	3.02	8.05	8.99	3.61	7.23
1966	2.07	3.89	—1.82	6.40	2.43	3.97	6.21	1.86	4.35	3.09	2.06	1.03
1967	4.92	3.04	1.88	4 08	2.95	1.13	7.74	1.79	5.95	0.00	3.36	—3.06
1968	1 61	4.60	2.99	2.06	3.09	—1.03	1.97	5.34	—3.37	2.10	2.10	0.00
1969	4.27	7.56	—3.31	3.47	3.03	0.44	2.62	4.36	—1.74	1.05	2.10	—1.08
1970	1.96	1.23	0.73	3.80	1.38	2.42	1.48	2.07	—0.59	2.13	1.06	1.07

and D. R. is found high in 1969. In engineering industries, the momentum of B. R. has been checked suddenly after the high B. R. in 1961. Afterwards, particularly in 1965 and 1967 the B. R. of the industry group under reference was better and an abrupt change occurred as from 1968 onwards, the resultant effect i.e, the nett effect is found negative in 1963 of the same industry group. The B. R. has been observed high in 1965 in case of the chemical industries and comparatively low in the year 1968, whereas the D. R. had been high in the latter mentioned year. On the whole, in comparison to other years the most successful industrial growth of the zone was observed during 1964-1965 ; on the contrary, the most stagnant time for various industries has been observed during 1967-1969.

Apart from the above stated emerging points, it is interesting to mention that at 1970 maximum industries existed (numbering—2677) in Calcutta ; then in Howrah (1244), 24-Parganas (590), and Hoogly (195)—total numbering (2029) and comparatively lesser (numbering—1109) in other twelve districts namely Bankura (numbering—81) Birbhum (numbering—82), Burdwan (numbering—260), Cooch Behar (numbering—11) Darjeeling (numbering—164), Jalpaiguri (numbering—246), Nadia (numbering—53), Purulia (numbering—50), and West Dinajpur (numbering—34).

Table No. 2 3 B. R., D. R. and Nett
Effect of four industry Groups in the Third Category of Districts

	AGRI			ENGG			CHE/INT			SER/OTH		
Year	B.R.	D.R.	Nett	B.R.	D.R.	Nett	B.R.	D.R.	Nett	B.R.	D.R.	Nett
	%	%		%	%		%	%		%	%	
1959	2.85	0.15	2.70	10.84	0.00	10.84	12.04	0.93	11.11	14.28	0.00	14.28
1960	2.33	1.02	1.31	10 86	2.17	8.69	6.66	0.00	6.66	9.37	0.00	9.37
1961	2.30	1.15	1.15	12.00	4.00	8.00	8.59	4.68	3.91	11.43	5-71	5.72
1962	2.71	0.57	2.14	5 55	4.62	0.93	12.03	3.75	8.28	8.10	8.10	0.00
1963	2.65	0.42	2.23	4.58	0.91	3.67	4.16	1.38	2.78	8.10	2.70	5.40
1964	0.96	0.82	0.14	7.07	1.76	5.31	5.44	3.40	2.04	2.56	2.56	0.00
1965	1.64	0.27	1.37	11.76	4.20	7.56	7.33	4.00	3.33	2.56	0.00	2.56
1966	0.67	0.81	−0 14	5.46	1.56	3.90	3.22	2 58	0.64	2.50	0.00	2.50
1967	3.37	0,67	2.70	9.77	2.25	7.52	7.69	0.00	7.69	2.44	2.44	0.00
1968	2.62	2.62	0.00	3 49	3.49	0.00	1.78	5.35	−3 57	4.88	2.44	2.44
1969	2.49	3,28	−0.79	1.39	3.49	−2.10	1.23	2.46	−1.23	0.00	2.38	−2.38
1970	1.32	0.53	0.79	2.14	0.00	2.14	2.50	0.00	2.50	0.00	2.44	−2.44

Whatever the present analysis has revealed, it is sure that the observations made here and the information brought out from it leave much place open to raise many a valuable questions. But at this stage more of the queries could be met with proper negotiable basis. It is thus suggested that future work with the approach to trace back the present line of thought further will be a significant and useful venture.

The most important outcome of the present analysis is the typical situation of the state of affairs of the entrepreneurship in West Bengal in the year 1966. It is interesting to note that from the view point of all possible considerations the said year had tremendous impact of the then prevailing situations and conditions in the State. The year 1966 can be said to be the napping time for the development of entrepreneurship in West Bengal. In this connection it can be mentioned here that recently in "The Statesmans", Calcutta (dated 14th Februry '73), it has been said that in this State the industries have faced a great shock during 1967, 1968 and 1969 for several factors like recession, shrinkage of orders for engineering industries, financial and other mismanagement and shortage of raw materials, etc. Our findings do confirm this result. But the typical condition of industries in the year 1966 in West Bengal, which has been revealed in present analysis, has been perhaps overlooked in the above mentioned publication.

It is seen that in all the categories the highest number of industries came into existence in the year 1965. But in the year 1968 there was a sharp increase in the death rate of industries in all categories. It will be worth exploring the intermediate period 1965-1969 to determine the precise causes of this lack of entrepreneurial activity in this period. Moreover, the unique pictures that have emerged from the analysis in the tables—2.1, 2.2 and 2.3, are very much relevant. It is well expected that these will throw some clues for further research in this trend.

It is also apparent from the tables that the districts potential has remained underutilised during this period. The resource of the State, we think, can be further exploited. It is in this light that further development programmes can be thought of. But it is clear that these programmes have to have an integreated approach which will outline a symbolic nature of development between the districts and Calcutta—the centre of all activity.

In fine, it can safely be said that irrespective of industry types (Agriculture, Engineering, Chemical and Service) and location of units, i.e., in various districts, the entrepreneurial activities in West Bengal did fail to achieve an uniform development during the span of twelve years i.e. 1959-1970. Various causes and reasons for this failure have been put forth from some corners of the State. Still after that, it can be suggested that various measures for further development of entrepreneurship in West Bengal should be taken keeping in mind two things ; firstly, the strong relationship of the districts' potentials and their proper utilisations ; and nextly, the impact of the happenings in socio-political life of the entrepreneurs of the capital of the State and their repercussion on the entrepreneurs residing outside the capital of the State. It is once again sincerely hoped that if these two phenomena can be manifested in rather a controlled way then the forthcoming entrepreneurs will be ultimately encouraged to take risk and invest and thereby pushing up the economic growth (which is very much possible through the entrepreneurial activities) of West Bengal which is at presents, if not at stake, undoubtedly in a decaying condition.

References

1. UNESCO, Social Aspects of Small Industries in India : Studies in Howrah and Bombay, (Delhi : United India Press, 1962).

2. Reserve Bank of India, Survey of Small Engineering Units in Howrah by H. Banerjee (Calcutta : Sree Saraswati Press, 1964).

3. "The Statesman", Calcutta—4th February, 1973 (Calcutta : Statesman House).

Economic Integration in South of South East Asia : A Case for Active Participation by India

Chandra Sekhar Upadhyay*

Since long the countries of South East Asia have aspiration for economic integration on the pattern of European Common Market. In South East Asia, there is no lack of enthusiasm in co-operating in regional projects at present, such as the sharing of common research and training facilities and the exchange of personnels, but there are considerable reservations about the regional projects which interfere with a nation's internal autonomy by requiring common price, monetary and fiscal or foreign trade policies or co-ordinated regional planning.[1] Thus there are some specific problems in the way of economic integration of the area. This paper proposes to examine the problems in the way of economic integration among South East Asian countries and the role of India as an initiator. It is divided into three parts. The first part presents the *philosophy* behind the economic integration in South East Asia with special attention on the developing nature of the area. We will indicate the main issues relating to the forms of economic co-operation. The second part deals with the measures which have been taken by these countries uptil now for increasing co-operation between each other, and suggests certain general methods for increasing co-operation for their mutual economic benefits. And lastly we have tried to indicate the role of India for promoting economic integration in the area.

I

It is a dream since last twenty years to organise economic integration among the Asian countries. In spite of anxiety and ready-ness of the Asian countries to form economic integration among themselves on the lines of Europe, Africa and Latin America whose economic benefits accruing through their integration have caused high aspirations among these countries, they have not been able to get much success in the field of economic co-operation. It is due to the fact that a large number of countries possess ancient cultures (traditional bearings) and different political set-ups which make it difficult for them to come together. On the economic side, the region lacks complementarity. Mostly the countries are developing, producing similar primary goods. They produce raw materials, agricultural commodities and other primary goods for the developed countries. Wide disparity in economic development and the absence of strong political will for economic co-operation among the countries of such a vast region, as is covered by the ECAFE, induce *sub-regional approach for economic integration in present situation.*

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[1] H. Myint, South East Asia's Economy in 1970's, London, p. 97

There has been various reasons which necessitate economic integration among nations like "the removal of permanent adverse balance of payments, stabilisation of prices of internationally traded commodities, generation of sufficient export surplus so as to be able to import capital goods required for accelerating economic development, etc."[2] There is very limited trade between South East Asian countries. The following table shows the direction of some South East Asian countries exports trade within themselves.

Table I

Showing the direction of export of some Asian Countries

Countries	Year	Percent of Total Period's Export Destined for South East Asia
1. Pakistan		17.7
2. India		10.3
3. Indonesia		38.1
4. Burma		59.8
5. South Vietnam		16.4
6. Philippines		4.3
7. Thailand		48.2
8. Ceylon		13.4
9. Malaya & Singapore		22.3

Source : Myrdal, G., Asian Drama, p. 590.

[2] D. D. Guru, 'Asian economic co-operation : An analysis of the possible forms', Asian Economic Co-operation, paper presented at Indian Economic Conference, Delhi 1971.

Except, Burma and Thailand, all other countries have very little trade interest in this area. This situation prevails at present too. So why UNCTAD Reported "Trade among developing countries is still at a much lower level both absolutely and comparatively, than is generally realised. Even the removal of trade barrier will not help these countries for their expansion of trade."[3]

The development programes of the countries on the national level necessitated a large amount of capital in the form of foreign currency. They felt unwarranted deficits in their balance of payments. This forced them to think in terms of economic co-operation to encourage trade among themselves by means of preferential arrangements so as to achieve a reduction of imports payable in scarce currencies, as was done by the "European countries after the world war II."[4] These countries faced the problem of high rate of fluctuations in their export earnings due to abnormal changes in prices, which naturally affected the process of economic development adversely. Since then the requirement of increasing supply of foreign exchange has caused establishment of economic integration in these countries.

Apart from their indigenous factors like the above, they also faced a decline in their shares of world trade. According to a GATT[5] Report the share of the developed countries in the total world export in 1969 was 73.3% and of developing countries was only 18.9%. Thus it is significant that trade expansion is limited mainly to the developed countries. Developing countries particularly South East Asia lagged behind. The table given below explains the phenomenon :—

Table II

Percentage Increase in Trade[6]

(during development decade)

	World	Developed countries	Developing countries	S. E. Asia
Import	11.4	12.9	6.6	12.5
Export	11.5	12.5	8.0	3.0

Calculated from GATT's Annual Report, 1969.

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[3] G. S. Kushwaha, 'Regional Trade Co-operation in South East Asia', Asia Economic Co-operation, paper presented at Indian Economic Conference, Delhi-1971,

[4] Regional Integration as a Means of Development, Memorandum submitted by France in UNCTAD 1964, Vol. 6, p. 25 as quoted by D. D. Guru, Ibid.

[5] 'GATT—Annual Report', 1969.

[6] G. S. Kushwaha, 'Regional Trade Co-operation in South East Asia' Asian

The Table shows that the rate of trade development of the developed countries is faster than the rate of *world trade.*

S. E. Asia's 3% annual increase in exports trade in the context of a plan for economic development is most alarming. Exports are vital for the development. Imports have increased four times more than the exports in these countries. *This specific feature necessitates immediate action for expanding trade among South East Asian countries, as an alternative search for the market in their capacity.*

Developing Nature of the Area

Since 1950, almost all the countries of South East Asia suffering from economic stagnation have been planning for a rapid economic development and to come out of the "vicious circle of poverty."[7] The area is characterized by having low level of savings and capital formation and land productivity of labour thereby leading to low income and poverty. The economy of this area is mainly mining, agricultural or plantation economy—depending on the primary commodities. At present this area needs economic advancement in the field of industry, trade, etc. and therefore it needs an economic (political too) framework of a group of countries to expedite their development processes.

Obviously here we face the problem regarding the form of economic co-operation. Charan D. Wadhwa[8] ably comes to the conclusion that "the term 'regional economic co-operation' will be used in a restricted sense of co-operation in the field of trade-liberalisation for promoting intra-regional trade" undoubtedly the 'third best' way of regional co-operation is the best way in the present situation. This will be an intermediate step for planning Asian regional co-operation. Economic co-operation means helping each other for the cause of rapid anc relative development process. Due to many social, political anc economic (as shortage of resources) reasons, it is not possible to have an integrated plan for the whole world or whole Asia. So it appear a necessity to have a regional approach on a rational basis.

Economic Co-operation, paper presented at Indian Economic Conference, Delhi 1971.

[7] R. Nurkse, 'Problems of capital formation in under-developed countries' New York, 1952.

[8] Charan D. Wadhwa (ed.), 'Asian Regional Economic Co-operation i Indian Perspective—Some Problems of India's Economic Policy, Bombay, 1973.

Countries with common interests and generally in similar stages of economic development have found it easier to form regional associations. It is politically acceptable to all the member nations of the area for promoting their economic growth.

It seems that potential for increasing intra-regional trade does not exist in the area, because apparently countries of this region are not complementary to each other. Except India, almost all the countries are specialising in primary commodities like rice, rubber, tea and jute, etc. Climatic similarities in the region tend to reduce the natural resource element of naturally gainful trade in sub-regional exchange [divergences of economic experience and productive expertise provide considerable opportunities for beneficial exchanges]. Hence, if we will talk of economic co-operation among developing countries on the lines of traditional approach of Jacob Viner, J. E Meade, and others—in the form of trade creation and trade diversion—it will be difficult to go ahead.

But the divergence of economic experiences and productive expertise provide considerable opportunities for beneficial exchanges in the region. Many countries of this region are individually deficient with respect to many of the commodities which other countries of this region export at internationally competitive prices. Thus there appears to be a scope for receiving gains from intra-regional trade through regional trade liberalisation.

The forms of co-operation for increasing economic welfare vary from multilateral trade agreements to bilateral trade agreements on the other. There may be various arrangements between the two—like removal of trade barriers, e.g. quota and tariff, and harmonization of plans, etc.[9] However, on crucial questions of co-operation among these countries, a wide range of possibilities lie open.[10] So far, economic co-operation in this area has been tried on the traditional form which has limited its scope. The Association of South East Asian Nations formed in 1967 consisting of Philippines, Thailand, Malayasia Singapore and Indonesia is planned to facilitate trade as also for economic co-operation in the promotion of tourism, pooling of shipping and airlines resources and joint industrial ventures.

Some work has been completed in the way of regional co-operation during the past few years. For example, lower Mekong

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[9] S. S. Mehta—"Trade Liberalization as a Form of Asian Co-operation—Myths and Realities", 'Foreign Trade Review' Vol. 5, No. 4, p. 592.

[10] D. D. Guru, op. cit,

Basin development scheme. The development of the Asian Highway System and joint activities regarding primary commodities, (i.e. rice, rubber, jute and coconut) but still more remains to be done for effectiveness. The establishment of Asian Development Bank has paved the way for institutional integration in the form of setting up a clearing union and a payments union. In spite of all these efforts, countries of the region are eager to export more of their products to other markets. They do not favour importing primary products produced by other countries. So, the pace of formation of units of co-operation has lagged far behind the progress in other parts of the developing world. Many countries of this region have undertaken import substitution measures for becoming self-sufficient in production of basic commodities. It necessitated measures to promote accelerated economic co-operation through trade liberalization schemes on region-wise basis, removal of quotas and tariffs on sub-regional basis as recommended by a special conference on Asian Economic Co-operation held in October 1964.[11] Various other countries have provided their suggestions, but nothing concrete has come out except one or two institutional settings.

As regards the form of economic co-operation, it is important to note that a practical look is neccessary for making economic co-operation a reality. Many have argued for geographical continuity on the lines of ECM and EFTA.[12] Actually it is the economic and political distance which forms the region and not the geographical distance. Thus the argument looses its significance. Others have suggested to co-operate on specific commodities as D. D. Guru puts the question "given a particular commodity or group of commodities what type of promotional measures could be thought of for fostering trade in themselves among the developing countries concerned."[13] To him, commodity arrangement would be more successful in comparison to regional measures of liberalization. Here it may be argued that before suggesting any form of economic co-operation, basically it is better to consider the primary motive behind economic co-operation. *The aim of economic co-operation is to achieve rapid and relative economic development of the country, and not only an increase in trade*

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[11] U. Nyum "ECAFE's Efforts in Promoting Trade Expansion", 'Foreign Trade Review, Vol. IV, No. 4, pp. 381-82.

[12] A. Rudra—"Regional Approach to Trade Problems of Developing Countries", 'Foreign Trade Review' Vol. I, No. 3, p. 263.

[13] Dr. D. D. Curu, op. cit.

volume. Therefore commodity agreements will not be fully suitable to serve the purpose. Actually it is the political and economic necessity of the region to have rapid development and they can achieve it as most of the countries have similar social, political and economic problems. What is needed is the mutual confidence and trust. Thus *direct interference by the State for the economic integration of the region is advocated as a favourable proposition.*

II

We have noticed earlier some achievements reporting economic co-operation in certain spheres gained by the region. The experience of S. E. Asia in this direction is not discouraging. The region has developed groundwork for trade co-operation. Asian International Trade Fair, Asian Development Bank, Development of Asian Highways, Harmonization and Co-operation in shipping ocean freight rates—all these will induce further co-operation.

The progress achieved so far in terms of "regional economic co-operation" has been achieved through the formation of sub-regional groupings in Asia. Considering the realities of the present situation, it seems that further progress of the region by economic co-operation in Asia would be achieved only through the extension of the present sub-regional groupings by including more nations in their field or by setting up new sub-regional groupings of "interested countries" of the region undertaking new measures of economic co-operation and having scope for extension of membership to the countries as and when the latter find it economically desirable and politically feasible.

In the ECAFF's session in Masile, some 12 joint projects were approved in principle covering the fields of tourism, easing of exchange restrictions, etc. Similarly in the fifth conference of Con-Federation of Asian Chambers of Commerce and Industry held in New Delhi discussion took place around "Asian prosperity through mutual co-operation." CACCI passed resolutions for the establishment of (1) Asian Agricultural Technical Service Centre, (2) Private Investment Company for Asia. In this period ECAFF has also taken some steps for drawing upon Asian trade expansion programme and settling an Asian Clearing Union.

In this respect 'Colombo declaration' is historic and momentous which *adopted an unanimons declaration proclaiming food, energy, raw materials and the need for the external financial reserves as region's 'most urgent priorities' requiring action.*

As relates to the nature of the problems, it certainly consists for the longrun. In the longrun it is necessary to take care of institutional factors like policy besides purely economic factors like trade liberalisation, tariff and quota concessions, commodity agreements, etc. Political harmony is necessary for the Plan harmony of the region. But one has to think for the shortrun too because this region is suffering with the problems like food, energy and raw materials. For this purpose we may accept D. D. Guru's proposition of Commodity Agreements for the expansion of trade at present. But this should not be our ultimate goal, but a mid-point for approaching longrun plan. Some agreements have already been reached (e.g. the Asian Coconut Community). There is considerable scope for such agreements on rice, jute, tea, rubber and tin, which will help the countries of the region in receiving better terms of trade in the world markets. The green revolution in the production of wheat and rice in this region will help the countries with growing population. The longrun strategy would depend on the plans for industrialisation.

The principle of reciprocity is an important pre-condition for any scheme of economic co-operation. There should be some suitable measures to prevent "persistent disadvantages" to any member country and to promote some parity in the rates of "expected growth in the flow of trade." Therefore, on a longterm basis the scheme of co-operation must ensure growth of industrialisation in backward countries of the region. If the integration acts as a retarding factor in the industrialisation of these countries then there will be no support for it.

III

India, on account of its size and influence, is situated in crucial position and has considerable opportunity to play an extremely constructive role in Asian affairs. Therefore, it wants to avoid a negative orientation towards ASEAN—as that only help in deepening the growing differences. The Economic Division of our Ministry of External Affairs intends to explore possibilities of co-operation with some of the more respective ASEAN countries.

It is significant that Indian Government is cautious and even ready to pay the price for receiving the benefits of economic integration. Actually India commands the position in the region. Therefore, it has to play a leading role in establishing mutual trade relationship among the countries of South East Asia and to pave the way for efficient economic integration. Since India is facing many problems like acute unfavourable balance of trade, foreign exchange crisis, non-availability of surplus for the export market, failure of industries in maintaining production to the optimum and other internal problems like inflation, price rise, unemployment, border dispute, etc., at present it seems a difficult task for it to think for economic co-operation. In spite of its internal difficulties, *India is expected to outweigh its losses resulting in active participation in the economic integration programme by the benefits.*

In this region only India has developed some industrial sector and therefore it is capable to provide necessary mechines, technical know-how and capital to other S. E. Asian countries. The following table which shows the trade relation of India with other countries of the region justifies India's active participation.

Table III

India's Trade to S. E. Asian Countries[13a]

(in lakhs of Rs.)

Name of the Country	Impots	1970 Exports
1. ECAFE	2241	7518
2. Burma	6	468
3. Ceylon	7	552
4. Hongkong	7	250
5. Indonesia	3	61
6. S. Koree	2	20
7. Malayasia	46	111
8. Nepal	90	515
9. Singapor	7	227
10. Thailand	13	75

In the year 1972-73 and 1973-74, India's exports to ECAFF countries increased. India's highest share of the exports goes to the ECAFE countries as it is evident from the table below :—

[13a] Industry & Trade Margine, Vol. 11, Part I, Nov. 1970. pp. 817-825.

Table IV

India's Exports[14]

(In crores of Rs.)

	Country	1972-73	1973-74
1.	Japan	217	355
2.	U.S.A.	276	343
3.	U.S.S.R.	304	238
4.	U.K.	173	258
5.	E.C.M.	407	594
6.	ECAFF	568	731

There is still more chances to increase our trade relations in this area allowing more facilities to the countries and receiving reciprocal benefits. India has a lot of chances to increase its exports in a way to help in the economic progress of the others countries by establishing industries. In 1973-74, the main items of India's exports earnings were the following :—

Table V[17]

	Name of the Commodity	Value (In crore of Rs.)
1.	Precious stones	106.71
2.	Iron one	132.83
3.	Tea	144.85
4.	Cotton textiles	160.15
5.	Khadi	170.6
6.	Leather	171.35
7.	Engineering goods	201.29
8.	Jute	227.28

This shows that India's main export items are non-traditional commodities like iron-ores, cotton textiles, engineering goods. These commodities have ample demand in the South East Asian countries, as they will form the primary infra-structure for their economic development. On the other hand, India also needs the primary commodities like rice from Burma, jute from Bangla Desh, and rubber and tin for its industrial development.

The spirit of regional co-operation would be an empty phrase if even a small measure of co-operation was not forthcoming in this direction. The question is how can India proceed to ensure for herself a larger share in the procurement of goods from the co-operation. Such an economic thrust can result only if we are able to build up our industrial

[14] Arthik Jagat, Calcutta, Annual Number 1974, p. 2.

[15] Arthik Jagat, Calcutta, Ibid,

(Continued on page 110)

Flow of Money to Non-productive Sector : A Major Inflationary Factor

Kalyan Ray*

The classic definition of inflation is too much money chasing too little goods. This means that the money supply in the economy has become out of step with the availability of goods and services. Inflation is the result of a gap between expectation of increased goods and services and actuality—availability of goods and services. There has been a phenomenal growth in money supply during the last few years, with negligible increase in production. However, to attribute the current phenomenon in the pricing front, entirely to increased money supply with stagnation in production, is to oversimplify the issue. Increase in money supply, to a certain extent, is essential in a developing economy.

The fact that there has been an increase in money supply, while industrial production has been stagnant, means that money has not found its way into the productive sector. With the industrial climate uncertain and wide-spread disruptions of production and supply machinery, money might have found its way into trade. Trading and manufacturing, although two distinct sectors in the economy, are too closely inter-related for categorisation. These sectors have been overlapping into each other over the years and now can no longer be so distinctly classified. Although, production and marketing form two distinct activities, most of the units are composite production and selling units. Majority of the production units have also their own sales organisation. Thus, it is no longer true to assume that production and selling are controlled by distinct categories of people.

The bigger and intelligent farmers have been obviously diversifying their activities, instead of only depending on farming. Their expectations have been also increasing over the years and they want the same benefit as their counterparts in the manufacturing and trading sectors. They are capable of holding on too large stocks and controlling the market.

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* In Indian Administrative Service.

The smaller farmers, on whom the Government had pinned its hopes, have not become viable units of production and where there has been some surplus, they have not been able to properly market the same for want of an organised distribution system. Small farmers, being generally economically weaker, are in possession of marginal lands, i.e. lands which have been left out in the process of natural selection. Landless labourers, who have been given lands by the Government are in possession of even worse lands. Most of these lands require huge investment for initial development. Such resources are not available to this section of farmers and no financial institution would venture to give such loan, as the repayment would be possible only after a long period. The credit-worthiness of these farmers is also exceedingly low, because the land held by them has low value, due to its both quantitative and qualitative aspects.

The proverbial vicious circle of poverty still operates, as the small farmers, being poor they are not able to be viable and their lack of viability denies them adequate credit.

In spite of these the small farms are able to generate sufficient marketable surplus. Immediately after the harvest, there are news reports of rice being sold at a very cheap rate in different rural areas and in isolated pockets. But the market price does not appreciably come down.

Obviously, much of such commodities do not find their way into the market. It is not very unreasonable to believe that the flow has been stopped at some point in the distribution channel. The stocks are probably being held at different intermediary points on the expectation of rise in prices.

The bigger farmers are probably intent on pressurising the Government to revise its stand on ceiling laws, etc. Those controlling the distribution net-work had probably also reacted against Government's policy of taking over of the wholesale trade in food-grains, by withholding supplies from the market.

It is also a well-known phenomenon that rural credit is interlinked with agricultural marketing. The credit void in non-viable agricultural units is definitely being exploited and the products of these units are already mortgaged. Moreover, commercial institutions have not made any effort to fill the credit needs due to the plethora of social demands on an average Indian peasant.

Central and State Governments have been giving monetary concession to their employees. specially in the lower category as a relief against the inflationary pressure. There has thus been an increase in purchasing power without any corresponding increase in production. So most of these increases having no relation to productivity, have contributed considerably to the inflationary pressure.

Land reforms measures necessitated pumping in huge amounts of money in the rural economy within a short period to compensate the persons having intermediary interests. Most of these persons did not invest their money in the organised monetary sector, primarily because of their lack of knowledge of this sector. One of the alternative uses of these compensation amounts could have been investment in improved agriculture. It is unlikely that all this money has gone into improved agriculture, where investnent is still a gamble without assured irrigation. In any case the major part of these compensation amounts could not have found their way into productive channels. It is quite likely that greater part of this money had only increased the holding capacity of the rural rich, who are now in a position to control the market.

The pumping in of too much money in the rural economy, which would not all be healthy. It is quite likely that persons with such huge supplies of money will have a firmer grip of the economy than they had through their control of land. The natural tendency of the compensation-earners would be to step in the large credit market which would open up due to the increased credit needs of the small land owners, who would have to immediately go into production with their own agricultural implements and other inputs. In most cases the owners will not be having these implements, as they have been so long cultivating the landlord's lands with the latter's implements and in return getting a share.

The climate of production being unstable, the money has generally found its way into trading activities. In the agricultural sector, the threat of 'ceiling laws' is always a 'Sword of Democles'. It is necessary that Government makes up its mind once for all and have a more production oriented policy. The solution may be to siphon away more people to the industrial sector and have more viable agricultural units.

A viable production unit in agriculture is as essential as a viable production unit in industry. The optimum combination of land, labour, capital and management needs to be worked out and once this has been done, the size of the holdings should not be further disturbed.

It is necessary to ensure that the flow of the agricultural product is not disrupted at any point in the production or distribution systems. By breaking the power of vested landed interests, production by smaller agricultural units will have to be sustained by liberal credit facilities. Agricultural credit will have to be linked up with procurement of agricultural product. This will mean that the credit agencies working in the agricultural field and the marketing agencies work in closer collaboration. The banking institutions should be actively associated with agricultural procurement activities.

The net-work of procurement should also be well worked out. The different intermediary procurement points have to be clearly located. It has to be ensured that the movement is not stopped at any particular point and there is a continuous flow.

Releasing of too much money at a time is to be avoided to prevent undue holding power of certain sectors in the economy.

(Cotinued from page 108)

image in south-east Asia. Whatever the government might claim, there is *still* no clear appreciation in this region of India's industrial capacity. Surprisingly enough, it still remains so. *People in S. E. Asia have no idea of India's industrial development and therefore there was considerable 'prejudice' against inviting India to participate in any venture. This necessitates that India should pay greater attention to S. E. Asia region.*

But India is a country of parodox, where less production pays more. The structure of internal market is such which leads to high profit by less production and in turn less employment. Thus the circle goes on. The technology, which we use for our production compounds this circle.[16] It needs immediate attention as G. Myrdal argues for overcoming the shortages of industrial production. Here, we may conclude with the statement of Shri K. V. Raghunath Reddy, Labour Minister of India, "Much like India, the countries of south-east Asia need innovative technology, that creates economic enclaves, but technology that creates jobs for the millions, and believe this is the area in which India has the best potentiality for setting an example.[17] Also only this technology will be successful for establishing co-operation in this region. India should stand ready to sacrifice some shortterm national interests for the sake of regional interests which are in line with the longterm national interests.

16. Ranjit Sen—"India and the Market of South and South East Asia"—Economic and Political Weekly', Jan, 26, 1974.

17. Quoted by Ranjit Sen, Ibid.

Economic Conditions of India

Introduction

1.1 By all accounts, 1974-75 was a year of unprecedented economic strains in the history of independent India. However, it was also a year of determined action on the part of the Government, demonstrating vividly the basic resilience of our democratic policy in grappling with crisis situations.

1.2 The first half of the year recorded the sharpest rate of increase of prices in the post-war years. Several factors contributed to this outcome. There was the disproportionate expansion of money supply inherited from the two previous years. Inflationary expectations also seem to have received an added impetus in the earlier part of the year because of unsatisfactory production and procurement of foodgrains during the 1974 rabi season. There was also a large increase in prices of various petroleum products as well as fertilisers in the beginning of the year—which was, in turn, an inevitable by-product of steep increase in posted prices of crude oil in January, 1974. The overall international environment of inflation, leading to a sharp increase in prices of a large number of imported products of basic importance to the economy, gave further stimulus to the already strong inflationary impulses operating in the economy. In a situation in which international prices of commodities such as foodgrains were much higher than domestic prices, imports, even when physically available, could not exercise a visible downward pressure on domestic prices. However, while international factors undoubtedly aggravated the situation, it must be recognised that the inflationary pressures of the last two years are basically rooted in some of the obvious inadequacies of our domestic economic structure, the principal manifestation of which can be found in the continued sluggishness of agricultural production since 1971-72.

1.3 Faced with the gravity of the economic crisis, the Government took vigorous measures designed to moderate the growth of monetary demand and to discourage unduly large accumulation of stocks. The combined result of the tax proposals contained in the regular Annual Budget for 1974-75 as well as the second Finance Act, the increase in postal rates and the enhancement of railway fares and freight twice in the year, was the mobilisation of a record amount of Rs. 690 crores by way of additional financial resources by the Central Government in 1974-75. In a full year, these measures are expected to yield Rs. 935 crores. The State also put in significant efforts at additional resource mobilisation, yielding Rs. 358 crores in 1974-75. On any reckoning, this was an impressive attempt at resource mobilisation. It is, however, unfortunate that a large part of these resources has been absorbed by inescapable commitments of non-developmental, though by no means non-essential, expenditure.

Table 1.1 : Selected Economic Indicators

(Percentage change over previous year)

	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
1	2	3	4	5	6	7
National income at constant (1960-61) prices	5.7	4.9	1.4*	—0.9*	3.1**	1.0+
Agricultural production	6.7	7.3	—0.4	—7.1*	9.1*	—
Foodgrains production	5.8	9.0	—3.0	—7.7*	6.8*	
Industrial production	7.4	3.0	3.3	5.3	0.5	3.8†
Electricity generated	14.4	8.4	8.8	4.8	1.6	7.8‡
Wholesale prices	3.7	5.5	4.0	9.9	22.6	27.2††
Money supply	10.8	11.2	11.3	15.9	15.3	3.1@
Imports	—17.1	3.3	11.6	—1.5	56.4	53.8‡
Exports	4.1	8.6	4.8	21.9	25.9	36.2‡
Freight carried by railways (net tonne kilometres)	2.5	—0.7	4.6	2.5	—10.4	3.7‡

+ Estimated

* Provisional

** Quick estimate

† April-July, 1974 compared to April-July, 1973.

†† April-December, 1974 compared to April-December, 1973.

@ As on January 31, 1975 compared to March 31, 1974.

‡ April-November, 1974 compared to April-November, 1973.

1.4 The Government made strenuous efforts to maintain the tempo of investment activity in the vital core sectors of the economy. During the course of the year, additional funds were allocated to these sectors to meet the unavoidable increases in project costs. Nevertheless, it cannot be denied that the pace of public sector investment could not be sustained at an adequate level. This was unavoidable in a year in which concern with price stability had, quite justifiably, the first priority in the mind of policy makers. To the extent various measures

(Continued on page 121)

Centre-States Financial Relations—I

Subhas Chandra Sarker*

There has been a lot of ill-informed and motivated discussion of the problem of autonomy—particularly financial autonomy of the States. This was brought out in sharp relief after the publication of the report of the Sixth Finance Commission, headed by the former Chief Minister of Andhra Pradesh Mr. Brahmananda Reddy, on 18 December 1973. Most of the comments gave the impression as if the States were getting undue money at the cost of the Central Government. The fact was, however, otherwise. Broadly speaking, what the Finance Commission does is to advise the Central Government on the allocation of revenues, some of which are collected by the Central Government on behalf of the States, to the different States. The Prime Minister, Mrs Indira Gandhi, made the point that the centralized collection of taxes made it possible for the economically weaker States to get a larger amount of resources than they could otherwise receive. Thus in 1969-70 while an industrially developed State like Maharashtra got only 25 per cent of the income-tax collected within the State, Andhra Pradesh got 147.5 per cent, Assam 173.8 per cent, Bihar 273.7 per cent, Haryana 181.3 per cent, Kerala 114.2 per cent, Orissa 346.2 per cent, Rajasthan 187.2 per cent and Uttar Pradesh 198.3 per cent. The share of the other relatively developed States was : Gujarat 41.5 per cent, Punjab 57.7 per cent, Tamil Nadu 62.5 per cent and West Bengal 52.0 per cent. The Sixth Finance Commission has noted that in terms of its award, Jammu and Kashmir, Himachal Pradesh, Tripura, Manipur, Meghalaya and Nagaland absorb Rs. 919.73 crores or 9.57 percentage of the aggragate transfers, although these States combined together account for only 2.26 per cent of the country's population. (Page 8).

This, however, provides only one side of the picture. In point of fact the States—developed or undeveloped—deserve more. And this point has been made by successive Finance Commission which went to the extent of passing a stricture on the functioning of the

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Central ministries. The Sixth Finance Commission has observed that if "a feeling still persists that the States have not had a fair deal, it would seem to be due not to any basic deficiencies in the constitutional set up, but perhaps to the style of functioning of Central Ministries at times." (Page 9). The Central Ministries, according to the Commission, "should cease to encumber themselves with routine administrative and supervisory functions which only annoy the States and result in avoidable duplication of effort and expenditure....This observations apply not merely to Central Ministries, but also to their agencies such as the University Grants Commission." (Ibid). Because generally non-Congress politicians are found to voice criticism of the centralizing activities of the Central Ministries and an erroneous impression has gained ground that the Congress Chief Ministers are quite happy over the matter. A cursory glance at the memoranda submitted by the State Governments headed by Congressmen would quickly dispel such an illusion Suffice it to say that even such an eminent Congress leader like Dr Sampurnanand has gone on record against the overbearing functioning of the Central Ministries to which a reference has again been made by the Sixth Finance Commission.

It is necessary to dilate upon this unpalatable point since a lot of confusion has been created by a misleading campaign against the State Governments and thereby suggesting a conflict of interest between the Centre and the States. This is utter nonsense since the better functioning of the States can never weaken the nation but only strengthen it and the goal of national policy should be to build up the strength of the nation. As the Sixth Finance Commission has stated, "attention should be focused on how best the various instruments in the fiscal armoury of the Central and State Governments can be further 'sharpened' and adequate resources raised for social and economic development." (Page 7). Since it is impractical to expect ministries headquartered in New Delhi to administer the affairs of the nation the need to strengthen the administration in the various States is obvious. It is in this context that the injustice done to the State in the matter of devolution of revenues under the provisions of the constitution of India is to be discussed.

Deficit Financing of the Centre and the States

The discussion on the finances of States in this country has generally suffered from a complete misunderstanding of the compulsion under which the State Governments have had to function. Most of the writers have been critical of what they have considered the "financial irresponsibility" of the States. Particular mention has been made of the overdrafts drawn by the State Governments from the Reserve Bank of India. The first important point forgotten by the critics of the State Governments is that it is not the State Governments alone that have to draw overdrafts from the Reserve Bank of India. In point of fact the Central Government has always drawn a large overdraft than all the State Governments combined together for the last nine years running. Indeed in three of these nine years (in 1966-67, 1969-70 and 1972-73) the State Governments combined together had shown a surplus budget and had thus done away with the need for any overdrafts. But the Central budget showed a deficit during each of these nine years from 1965-66 to 1973-74. The cumulative deficit of the Central Government during these nine years ran to the staggering amount of Rs. 2,685 crores. Compared with this, the cumulative deficit of all the State Governments amounted to not more than Rs. 104 crores ! (See the *Reserve Bank of India Report on Currency and Finance 1972-73*, p. 138).

All major political, economic and administrative decisions are taken in this country by the Central Government which does not consult the State Governments while taking such decisions. The State Governments are thus often forced to deal with extraordinary situations created by the Central Government. Deficit financing indulged in by the Central Government pushes up prices of all commodities and services. The decision to raise steel prices suddenly by as much as about Rs. 800 per ton in some cases, for example, pushes up the cost of construction in the States without any fault on their part. Much the same impact has been caused by the hike in the prices of petrol and petroleum products which has brought about a large scale dislocation in the working of several States. Example could be cited *ad infinitum*. In short, most of the time of the State Governments is taken to adjust their working to the far-reaching impact of the Central Government's decisions. It is a grave blunder to blame the State Governments for financial indiscipline which to a major extent is not of their own making but which is imposed on them by the actions of the Central Government decided upon without consulting the State Governments.

Exclusion of Corporation Tax

There is considerable force in the demand of the States for enhancing the share of the States in income-tax. A great injustice was done when in 1959 income-tax paid by the companies was excluded from the divisible pool and was marged in corporation tax. This measure not only eroded the divisible pool of income-tax to be allocated to the States but deprived the States of a source of income which has a built-in buoyancy. The income-tax paid by the companies just before its exclusion in 1959-60 from the divisible pool stood at Rs. 68.81 crores. But for the changes made in pursuance of the Finance Act of 1959 it would have risen to Rs. 232.5 crores by 1969-70. The fact is that receipts on account of corporation tax have been growing much faster than receipts on account of income-tax. Between 1958-59 and 1972-73 (revised estimates) corporation tax receipts rose from Rs. 54.3 crores to Rs. 558 crores or more than ten times. During the same period receipts on account of income-tax rose from Rs. 172.8 crores in 1958-59 to Rs. 66 crores in 1972-73 (revised estimates) or a little over three times. While in 1958-59 corporation tax receipts at Rs. 54.3 crores amounted to very much less than even one-third of income-tax receipts at Rs. 172.8 crores, in 1972-73 corporation tax receipts at Rs. 558 crores were short of equalling income tax receipts at Rs. 668 crores by only Rs. 110 crores. It has to be borne in mind that during this intervening period of fifteen years there have been five years when receipts on account of corporation tax exceeded receipts on account of income-tax (and in one year 1961-62 they almost equalled corporation tax Rs. 160.8 crores, income-tax Rs. 161 crores). This happened in 1962-63 (corporation tax Rs. 220.1 crores, income-tax Rs. 187.4 crores), 1963-64 (corporation tax Rs. 287.3 erores, income-tax Rs. 245.6 crores), 1964-65 (corporation tax Rs. 313.6 crores, income-tax Rs. 266.9 crores), 1965-66 (corporation tax Rs. 304.8 crores, income-tax Rs. 271.8 crores) and 1966-67 (corporation tax Rs. 330.8 crores, income-tax Rs. 306.6 crores). The justice of the demand of the States to a share in the corporation tax has been admitted by the Sixth Finance Commission which has suggested that the question of bringing corporation tax within the divisible pool be brought up for examination before the National Development Council. In the view of the Commission there "is no reason to apprehend that the inclusion of Corporation tax in the list of shareable taxes would *ipso facto* upset seriously the relative balance between Central and State resources." (pp. 11-12).

Income-tax Distribution

No Finance Commission has so far been able to do justice to the States' claim for a larger share of income-tax. The hold of centralism in this country was so severe that at one time the divisible pool was only 50 per cent of the total income-tax collected. The proportion was raised to 75 per cent by the Fourth Finance Commission and was retained at that level by the Fifth Finance Commission. The Sixth Finance Commission did not accept the suggestion of the State Governments to recommend the entire collection of income-tax to be divided among the States but suggested that the percentage should be raised from 75 to 80. In other words 80 per cent of income-tax collection would be divided among the States. Receipts on income-tax totalled Rs. 668 crores in 1972-73 (revised estimate). To be precise, the basis of distribution of the proceeds of income-tax would be : (a) of the net proceeds of taxes on income in each financial year, a sum equal to 1.79 per cent will be the share of the Union Territories ; (b) the percentage to be assigned to the States after deducting the portion representing the proceeds attributable to the Union Territories will be 80 per cent. According to the scheme of devolution, the proportion of income-tax proceeds to be distributed to the various States would be Andhra Pradesh 7.76 per cent of divisible pool ; Assam 2.54 per cent, Bihar 9.61 per cent, Gujrat 5.55 per cent, Haryana 1.77 per cent, Himachal Pradesh 0.60 per cent, Jummu and Kashmir 0.81 per cent, Karnataka 5.33 per cent, Kerala 3.92 per cent, Madhya Pradesh 7.30 per cent, Maharashtra 11.05 per cent, Manipur 0.18 per cent, Meghalaya 0.18 per cent, Nagaland 0.09 per cent, Orissa 3.73 per cent, Rajasthan 4.50 per cent, Tamil Nadu 7.94 per cent, Tripura 0.27 per cent, Uttar Pradesh 15.23 per cent and West Bengal 8.89 per cent. (Page 13 of the *Report of the Sixth Finance Commission, 1973*). The Commission has gone by the same principles of distribution among the States as were followed by the Fifth Finance Commission, viz, 90 per cent of the divisible pool to be distributed according to the population in 1971 census and 10 per cent to be distributed on the basis of the collection of income-tax within individual States. Receipts or account of income-tax totalled Rs 673 crores in 1973-74 (revised estimate). Out of this Rs. 32.50 crores would be retained by the Union Government as Union surcharges, Rs. 22.50 crores would be deducted as salaries to Central Government officials. Rs. 24.29 crores would be deducted as collection cost by the Central Government, Rs. 15.44 crores would be distributed to the Union Territories. The divisible pool would be Rs. 578.27 crores of which the States combined together would receive Rs. 438.15 crores. With adjustments of unadjusted advance tax collections up to 1966-67 and adjustments made on the basis of departmental actuals for 1971-72, the total amount disbursed to the States in 1973-74 would be Rs. 531.64 crores according to revised estimate. The Central Government would retain Rs. 46.63 crores which together with the surcharges of Rs. 32.50 would total Rs. 79.13 crores of net receipt compared with the total receipts on this account of Rs. 62.48 crores by Maharashtra, Rs. 49.67 crores by West Bengal, Rs. 43.29 crores by Tamil Nadu and Rs. 83.17 crores by Uttar Pradesh. Although several State Governments had asked for a merger of the union surcharges or income-tax in the divisible pool the Sixth Finance Commission did not make any recommendation in this regard, since it would have meant recommending the change in the Constituion. But significantly enough the Commission noted the point. (Para III. 3 & 5 on page 11 of the Report).

Union Excise Duties

There has been a contrary movement in the determination of the States' share of the Union excise duties. The First Finance Commission decided that forty per cent of the Union excise duties should be distributed to the States ; but the Second Finance Commission reduced the share to twenty-five per cent. The Third Finance Commission reduced the share further to only twenty per cent. The Fourth and the Fifth Finance Commission maintained the same percentage. It has to be pointed out, however, that while the First Finance Commission had taken into account only three of the thirteen items then subject to excise duty for the purpose of distribution of excise duties to the States, the Fourth Finance Commission extended the the sharing scheme to all the items subject to basic excise and the Fifth Finence Commission went a step further and brought into the divisible pool all special excise levies also (though this was limited to the last two years for which the Fifth Commission's recommendations were applicable, namely 1972-73 and 1973-74). The extension of the list should normally have resulted into a gain for the States if the proportion marked for the divisible pool had remained constant. Since, however, the proportion was reduced from forty per cent recommended by the First Finance Commission to twenty per cent by Fifth Finance Commission the gain for the States has been much less. The demand of the States has been that the entire net proceeds both from the basic excise and the special excise duties should be shared with the States and that the States' share in the divisible pool should be raised from twenty per cent to at least 33-1/3 per cent of the net collections. The Sixth Finance Commission has rejected this demand and maintaied the divisible pool at twenty per cent of the net collection of Union excise duties. What it means in practice can be gauged from the fact that Union excise duties rose from a mere Rs. 67.5 crores in 1950-51 to Rs. 2428 crores in 1972-73 (revised estimate) and to Rs. 2741 crores in 1973-74 (budget estimate). Twenty per cent of Rs. 2741 crores is only Rs. 548.20 crores while 33-1/3 per cent will make it Rs 913.66 crores. By rejecting the States' demand for raising the percentage share of the divisible pool of Union excise duties the Sixth Finance Commission had deprived the States of as much as Rs. 365.46 crores. The actuals in all cases would be somewhat smaller after deduction of refund and collection cost from the divisible pool. The Sixth Finance Commission has also recommended the inclusion of regulatory excise duties in the divisible pool from 1975-76. In 1974-75 Rs. 500.66 crores would be distributed among the States out of an expected net collection of Rs. 2503.29 crores of basic excise duties.

The Sixth Finance Commission recommended the following formula for the distribution of the divisible pool of Union Excise Duties among the different States. Twentyfive per cent of the divisible pool should be distributed on the basis of the relative backwardness on the States which is to be measured by the 'distance' of a State's per capita income from that of the State with the highest per capita income multiplied by the population of the State concerned according to the 1971 census. The balance 75 per cent of the divisible pool would be distributed among the States on the basis of population. On the basis of such a computation Andhra Pradesh would get 8.16 per cent of the divisible pool of Union Excise Duties, Assam 2.71 per cent, Bihar 11.47 per cent, Gujarat 4.57 per cent. Haryana 1.53 per cent, Himachal Pradesh 0.63 per cent, Jammu and Kashmir 0.90 per cent, Karnataka 5.45 per cent, Kerala 3.86 per cent, Madhya Pradesh 8.15 per cent, Maharashtra 8.58 per cent, Manipur 0.21 per cent, Meghalaya 0.19 per cent, Nagaland 0.11 per cent, Orissa 4.06 per cent, Punjab 1.87 per cent, Rajasthan 5 per cent, Tripura 0.30 per cent, Uttar Pradesh 17.3 per cent and West Bengal 7.79 per cent. (Page 17 of *Report of the Sixth Finance Commission*, 1973). The five percentage point increase in the weightage to backwardness goes in favour of the backward States.

Additional Duties of Excise

Additional excise duties are duties levied in 1957 on textiles, sugar and tobacco in lieu of States' sales taxes thereon. This was done by the Government of India with a view to minimising the chances of leakage and evasion and the convenience to trade and industry resulting from levy at the point of production. The Fifth Finance Commission recorded the dissatisfaction of the States over the manner of administration of additional excise duties. The complaint of the States was that while the Government of India had been increasing the basic excise duties and introducing special excise duties on the same commodities, it had kept unchanged the rates of the additional excise duties. Between 1958-59 and 1967-68 the revenue from the basic and special excise duties on these three commodities had increased by more than seventy per cent while that from additional excise duties increased only by 45 per cent. The Fifth Finance Commission noted that "if the States had been free to exercise their power to levy sales tax on textiles, sugar and tobacco many of them would have been able to realise more revenue from them." Here was thus another constraint imposed on the tax raising capacity of the State Governments. It is true that the law does not, strictly speaking, prevent the State Governments from levying sales tax on the specified commodities, but if any State Government did impose such a sales or purchase tax, no sums would be paid to the State Government as its share out of the net proceeds of additional excise duties unless the Government of India directed otherwise by a special order. It is easy to see why no sensible State Government should invite such a forfeiture of its sure income through an action which has, besides, serious adverse implications for the economy of the State. As the Sixth Finance Commission has observed, "State Governments are thus effectively prevented from reimposing sales tax on these commodities though their constitutional right to levy sales tax remains unimpaired." (Para V. 2 on page 18 of the Report). The Fifth Finance Commission observed that "inasmuch as the States are generally opposed to it (scheme of additional excise duties), we consider that it would not be desirable to continue the scheme unless the Government of India, after discussing the matter further with the State Governments, can arrive at a general agreement for its continuance with suitable modifications." The Commission further suggested that such discussions with the State Government may be held as soon as possible" (Para 5-14 on page 42, *Report of the Finance Commission 1969*).

(Continued)

(Continued from page 112)

of resource mobilisation have led to a reduction in the magnitude of deficit financing and slowed down the expansion of money supply, they have helped to create a macro environment conducive to greater economic stability.

1.5 Measures for additional resource mobilisation were supplemented by more direct attempts at regulation of disposable consumer incomes. Thus the legislation impounding a part of additional dearness allowances and the entire increase arising from revision of wages and salaries, imposition of restrictions on declaration of dividends beyond stipulated limits and compulsory savings for tax payers in higher income brackets, represented a serious effort at moderating the growth of household spending. The increase in interest rates and exercise of greater discipline since the 1974 slack season in the expansion of bank credit to the commercial sector were designed to encourage savings and to provide a disincentive to excessive accumulation of inventories. It is possible that some of these measures produced unintended adverse side effects. However, their overall impact thus far in the current year has been to bring about a visible reduction in the rate of growth of money supply. In a year, which is likely to be characterised by hardly any growth in real national income, a more rapid increase in money supply would have greatly intensified the inflationary pressures.

1.6 As part of a package of anti-inflationary measures, Government also intensified its operations against smugglers, hoarders and blackmarketeers. The active use of MISA against smugglers and other anti-social elements seems to have immobilised a part of black money hitherto being used to finance an undue accumulation of inventories. The resulting reduction in the velocity of circulation of money has encouraged dishoarding of sensitive commodities and, as such has assisted in stabilising the price level.

1.7 The adoption of various measures designed to moderate the growth of monetary expansion does not imply a blind faith in the monetarist approach to problems of economic policy. However, considering the exceptionally large growth of money supply in recent years, one does not have to subscribe to the monetarist prescriptions to conclude that greater financial and monetary discipline must constitute an essential element of any stabilisation policy. At the same time, it is recognised that in a predominantly agrarian economy, food prices form the king-pin of the price structure and that these prices can be stabilised only by ensuring a proper balance between demand and supply. Since, in the short run, output could not be increased significantly, there was no alternative to sizeable imports of foodgrains. Accordingly, Government arranged to import about five million tonnes of foodgrains in 1974-75. Moreover, in order to influence the state of price expectations, in the closing months of 1974, the Government firmly resisted sectional pressures for higher procurement prices, which could not be justified by the objective requirements of increased production or procurement.

1.8 The behaviour of prices since the third week of September, 1974 indicates that the various stabilisation measures have had a favourable impact. The fall in prices in the last quarter of 1974, notwithstanding an unsatisfactory kharif crop, suggests some weakening of inflationary forces. The improved prospects for the forthcoming rabi crop can be expected to have a further moderating influence on prices. Even then, it has to be recognised that there are still sizeable imbalances in the demand and supply of basic wage goods. As such, it will be unwise to assume as of now, that the struggle against inflation has been brought to a successful conclusion.

1.9 The performance of some important sectors of the economy in 1974-75 is summarised in the following paragraphs.

National Income, Savings and Investment

1.10 Official estimates of national income in 1973-74 indicate that the growth rate was only 3.1 per cent. The overall rate of growth of the economy during the Fourth Plan averaged about 3 per cent per annum. This is a disappointing performance for an economy in which population is increasing at an average annual rate of 2.2 per cent. Since effective solutions for the basic problems of poverty and underdevelopment can be found only through rapid economic growth, our objective must be to gear the economy to a higher growth rhythm than it has been used to in the past. Unfortunately, no visible progress is likely to have been made in this direction in 1974-75 since the economy, on current expectations, is not likly to record a rate of growth of more than one per cent,

1.11 Official estimates of saving and investment for 1973-74 are still not available. However, it appears that the steep rise in the price level has adversely affected the rate of saving in the economy. Due to lack of data on savings in the form of physical asset formation in the household sector, a broad idea of the saving of this sector has necessarily to be based on data on net financial assets of this sector. The Reserve Bank has estimated that household saving in the form of financial assets at current prices increased by only Rs. 329 crores in 1973-74. Computed in real terms, the increase would be negligible. While in terms of current prices, the saving of the public sector consisting of Central and State Governments (including local authorities) and their undertakings was perhaps a shade better than in the previous year, here again, in real terms, there appears to have been a decline on account of the price rise. In respect of the private non-financial corporate sector also, it is estimated that its saving in 1973-74 was stagnant at the 1972-73 level, In sum, therefore, the aggregate domestic saving in 1973-74 seems to have declined in real terms.

1.12 As regards investment, some idea of the capital formation in the public sector in 1973-74 can be formed on the basis of economic classification of the Central Budget. These data show that, although in money terms there was a marginal increase in capital formation, in real terms there was a significant decline. It is not possible to give even an approximate estimate of capital formation in the household sector for lack of adequate data. In regard to the private non-financial corporate sector, however, an overall view about the trend of investment based on the flow of funds to this sector for investment purposes through financial intermediaries, capital issues and its own investible funds generated through retained profits and depreciation provision can be formed. Based on these data, the Reserve Bank has estimated that the gross capital formation of the corporate sector increased by less than 9 per cent in 1973-74 compared to an increase of 13.5 per cent in the preceding year.

1.13 In aggregate terms, both domestic saving and investment as a proportion of national income seem to have declined in 1973-74 as compared to 1972-73. While domestic saving was about 10 per cent of national income, investment may have been around 11 per cent of national income. There is unlikely to have been any improvement in 1974-75. This is an indication of the task that lies ahead in our quest for a more dynamic economy.

Agriculture

1.14 There is considerable evidence to suggest that India's agriculture seems to have lost the momentum for growth it exhibited in the late sixties. The index of agricultural production reached a record level of 131.6 in 1973-74. However, it was only marginally higher than the previous peak level of 131.4 reached in 1970-71. The fact that the population of the country has since increaesd by nearly

7 per cent underscores the imbalance between availability and requirements as a result of the sluggishness of agricultural output.

1.15 In large measure, adverse weather conditions have been responsible for this unsatisfactory state of affairs. However, it would be a mistake to regard the continued sluggishness of agricultural output as being due wholly to the operation of such random factors as weather conditions. For example, the decline in the output of wheat after 1971-72 is partly attributable to the appearance of a new rust disease affecting Kalyan Sona. Because of more favourable weather conditions, the output of wheat during the coming rabi season may well stage a recovery. Nevertheless, the maintenance of a healthy upward trend in the output of wheat is crucially linked to the availability of new rust resistant varieties of seed. As regards rice, despite a three and a half times increase in the area under high yielding varieties in the Fourth Plan period, there has been no visible acceleration of the rate of growth of productivity in the traditional rice growing States. Although output in 1973-74 reached the record level of 43.7 million tonnes, it was only marginally higher than the previous peak level of 43.1 million tonnes reached in 1971-72. The output of rice in the 1974 Kharif season is estimated to have declined by nearly 1.7 million tonnes from the level of 40.7 million tonnes reached in the kharif season of 1973. Susceptibility of new varieties to pests and diseases, particularly under conditions of lack of effective control on water supply, continues to pose a major problem. Among coarse grains, with the exception of bajra, the new high yielding varieties have yet to establish their popularity. As for pulses, there are at present no effective high yielding varieties. Production in the Fourth Plan period averaged 10.9 million tonnes, which was only slightly above the average for the First Plan (10.7 million tonnes). Among commercial crops, the new varieties seem to have made a visible impact only in the case of cotton. Even in this case, output after 1971-72 has failed to reach the peak level of 6.6 million bales attained in 1971-72. Output declined to 5.4 million bales in 1972-73 but recovered to 5.8 million bales in 1973-74. In 1974-75, the output is likely to be about 6.0 million bales. There are indications that while the output of sugarcane in 1974-75 may be about the same as in 1973-74, there is likely to be a decline in the production of both oilseeds and raw jute

1.16 On current reckoning, the Index of Agricultural Production in 1974-75 is unlikely to record any significant increase. The output of foodgrains may be about the same as the level of 103.6 million tonnes reached in 1973-74. The sub-group index of commercial crops may record a decline.

Industrial Production

1.17 Industrial output in the first seven months of 1974 increased by 2.3 per cent. Judging by the available production data for subsequent months, the rate of growth of industrial production in 1974 may be about 2.5 per cent as compared to 0.7 per cent in 1973. However, for the fiscal year 1974-75, the increase in industrial production may be of the order of 3.5 per cent as compared to 0.5 per cent in 1973-74.

1.18 In the earlier part of the year, factors such as shortages of power, fuel and transport facilities hampered industrial production. More recently, there has been a notable improvement in the generation of power and in the production and transport of coal. However, on account of none too encouraging prospects for increased availability of agricultural raw materials, the overall outlook for industrial production continues to be uncertain. In the meanwhile, if unsettled conditions in industrial countries affect the demand for our exports, this could be a further complicating factor.

1.19 It is a matter of considerable satisfaction that many public sector undertakings continue to record higher levels of production. Output in a number of core sector industries has shown encouraging trends. According to advance information which is necessarily of a provisional nature, industries such as electricity generation, steel and coal recorded a significant increase in output during the period April to December, 1974 as compared to the corresponding period of 1973. The output of electricity went up by 6.0 per cent, of saleable steel from principal producers by 10.4 per cent and of coal by 8.5 per cent. The output of nitrogenous fertilisers went up by 8.0 per cent though that of phosphatic fertilisers went down by 7.1 per cent. On the debit side, industries like cement and aluminium recorded a fall in output by 3.5 per cent and by 17.0 per cent respectively. Among consumer goods, the production of vanaspati declined by 29.3 per cent. While the output of cotton yarn remained stagnant, that of mill made cotton cloth went up by 3.9 per cent. The output of commercial vehicles declined by 6.7 per cent while that of cars and jeeps went down by 23.7 per cent and 19.7 per cent respectively. The output of rcooters went up by 15.0 per cent. Vehicular diesel engines recorded an impressive growth of 45.2 per cent.

1.20 Although the capital market and, in particular, the new issues market, has been depressed since the ordinance imposing restrictions on divedends was issued in July, 1974, the data relating to approvals by the Capital Goods Committee, and demand for funds from the term financing institutions do not indicate any visible slackening of industrial investment in 1974-75. However, since investment behaviour is often subject to unpredictable moods of pessimism and optimism, the situation needs to be carefully watched so as to facilitate a flexible response to the emerging situation.

Prices

1.21 The Wholesale Price Index reached its highest peak in the week ending September 21, 1974. The index at that point was 32 per cent higher than during the corresponding week of 1973. In the following three months, prices declined by about 5 per cent. As a result, the index at the end of December, 1974 was 18.8 per cent higher than at the end of December, 1973. This is to be contrasted with an increase of 26 per cent in the index between December, 1972 and December, 1973. Despite the welcome relief of recent months, the average value of the Wholssale Price Index in 1974 went up by 27.3 per cent as compared to the average increase of 19.2 per cent in 1973. This is an indication not only of the continuing strength of the inflationary forces in the economy but also of severe distortions that inflation has introduced in our economic structure.

1.22 It has to be noted that nearly one-half of the rise in the Wholesale Price Index both in 1973 and in 1974 was due to a steep increase in the prices of food articles. The improved prospects for the forthcoming rabi crop, the fact that Government have arranged to import sizeable quantities of foodgrains to maintain an orderly flow of foodgrains through the public distribution system and a reduction in the rate of growth of money supply can be expected to have some stabilising effect on prices. Moreover, the impact of the sharp increase in the prices of petroleum products would by now appear to have been largely absorbed in the price structure. Taking all these factors into account, one can expect that in the coming months, the rate of growth of prices will slow down as compared to the corresponding period of the last year. However, given the existing precarious balance between demand and supply of basic wage goods and the known instability of agricultural output, it cannot be readily assumed that, without additional efforts, we can look forward to a regime of reasonable price stability.

Fiscal and Monetary Policies

1.23 Available data indicate that despite various efforts by the Central Government to mobilise additional resources and curb less essential expenditure, the budgetary deficit in 1974-75 will turn out to be much higher than the figure of Rs. 126 crores mentioned in the budget estimates. This is due to higher expenditure than was originally budgeted for on items such as food and fertiliser subsidy, payment of dearness allowance to the Government employees, certain commitments to the States on account of drought relief and budgetary support for a number of public sector enterprises for meeting their cash losses. Nevertheless. it is a matter of some satisfaction that during the current year so far, deficit financing at the Centre, as measured by the net increase in the Reserve Bank credit to the Central Government, has been running at a rate lower than that of last year. The improvement is much more marked if one takes into account both the Centre and the States. The net increase in the Reserve Bank credit to Government (Centre and States combined) works out to Rs. 540 crores during the current fiscal year up to January 31, 1975 as compared to Rs. 807 crores during the corresponding period of 1973-74.

1.24 As a result of a more selected credit policy, the rate of growth of bank credit to commercial sector during the current year so far has been significantly less than last year. Thus between March 31, 1974 and January 31, 1975 the increase of Rs. 959 crores in bank credit to commercial sector was considerably lower than the increase of Rs. 1,287 crores last year.

1.25 As a combined result of smaller expansion in bank credit both to Government and to the commercial sector, and a decline in foreign exchange assets of the banking system, there has been a visible reduction in the rate of growth of money supply in the current year. The expansion in money supply amounted to Rs. 337 crores between March 31, 1974 and January 31, 1975 as against Rs. 960 crores witnessed during the correponding period of 1973-74. There has been a sizeable contraction in the currency component of money supply during the current year so far (till January 31, 1975) in contrast to an increase of Rs. 565 crores in the corresponding period of 1973-74.

Balance of Payments

1.26 The steep increase in the prices of imported fuel, food and fertilisers has given rise to renewed pressures on our balance of payments, even through this pressure has so far been contained within manageable limits as a result of significant increase in the value of our exports as well as large borrowing from the IMF.

1.27 According to the customs data, exports during 1973-74 increased by about 26 per cent as compared to 1972-73. On the other hand, the value of total imports recorded a still sharper increase of nearly 56 per cent. As a result, the balance of trade showed a deficit of Rs. 437.7 crores in 1973-74 as compared to a surplus of Rs. 100.3 crores in 1972-73. During the first eight months of 1974-75, the trend towards a faster expansion of imports than that of exports has continued. While exports moved up by 36 per cent, the rise in the value of imports was of the order of 54 per cent, resulting in an adverse trade balance of Rs. 425 crores.

1.28 In Febrhary, 1974, India drew Rs. 62.6 crores under the compensatory financing facility of the IMF. In the current year, India has so far drawn Rs. 488 crores from the IMF. The IMF borrowings have to be rapid in the coming 3 to 7 years. This implies that unless India's imports decline in the coming years or exports display a much greater buoyancy than was the case in the past, we shall be faced with a balance of payments problem of unusual severity. In this context, the highest priority needs to be attached to reducing our dependence on imported foodgrains as well as imported oil and fertiliser. In any viable planning for our balance of payments, we must also take note of the continuing weakness of India's export promotion efforts. The recent increase in the value of exports is mostly a consequence of fortuitous circumstances connected with world inflation and the international commodity boom. In volume terms, India's exports in 1973-74 grew no faster than 3.6 per cent and the average annual rate of growth of export volume in the Fourth Plan period was no higher than 4.2 per cent. With the expected decline in international commodity prices to their more normal levels, India's export earnings may receive a visible setback unless we can revitalise our promotional efforts.*

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* Source : Economy Survey 1974-75.

ECONOMIC AFFAIRS

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Rupee-Rouble Tussle

Waves have passed over the Indian Parliament on the rupee-rouble rate of exchange as it reveals the true socialist character of Soviet trade with India. The parties in opposition have tried to assert that the Soviet Union's unilateral alterations of the rupee-rouble rate from Rs 8.33 for a rouble in 1966 to Rs 11.39 in 1971 to Rs 9.51 in March 1974 and then changing the rate almost every month to Rs 8.66 in March 1975 are an act of economic immorality and unbecoming for an officially friendly country. The forced depreciation of rupee in relation to rouble has all been to her advantage so much so that if past payment transactions come within the purview of the new parity of Rs 8.66 for a rouble India shall have to pay Rs 400 crores more to Soviet Union.

The Finance Minister has come to pacify the raised feelings of the opposition members with the arguments that the new exchange rate has nothing to do with the past payment transactions and even with the current and future commercial transactions. It will affect only about one per cent of the rupee transactions ; for the rate is applicable only to such rupee transactions as are made within the Soviet Union, the Indian Embassy's expenditures including. About 99 per cent of the "commercial" transactions will continue to be made at the originally agreed rate of Rs 8.33, which is based on the gold contents of the respective currencies.

The Soviet side says that it has to revise the exchange rate periodically due to fluid exchange rates in the capitalist world and the revision of rupee-rouble rate is made by calculating the value of the rupee by averaging the cross rates of the major world currencies with the Indian rupee. Pointedly speaking, the linking of rupee with sterling has caused much trouble to rouble for the sterling has to float.

The base point should be economic and not political. The Soviet Union has to justify its acts of frequently and unilaterally altering the exchange rates. Perhaps it can claim no justification. Besides being the fact that its acts are unilateral, there had not been any change in the gold content of either currency. No doubt that the sterling has been in difficulty since 1972 and it floated on June 23,

1972. But in recent time it has regained much of its strength and along with it the rupee too. But how does the sympathetic depreciation of rupee with sterling affect the Soviet interest when the two countries' commercial transactions are on bilateral basis and unaltered gold content ? The Soviet side has to explain this.

To understand Soviet Union sympathetically is to understand it and its Comecon countries (Eastern European countries) now in the process of great historical socio-economic transformation. In Comecon rouble commands more than what the dollar once commanded in free nations as is evident from the Comecon's acceptance in principles of the multilateral clearing of trade accounts on the basis of "transfer rouble", and establishment in 1964 of the International Bank for Economic Cooperation to handle such transactions. The Soviet Union's aim is to "integrate" the Comecon countries' economy with its own. For the Soviet Union not only holds the last word in all matters of these countries but also provides most of their raw materials and absorbs most of their manufactures. But, the Soviet Union including, they have "rediscovered" that for sharpening the edge of the socialist strategy of "co-existence" they shall have to import the advanced technology of the capitalist West and for accelerating their ambitious growth rates, its savings. Capitalist grains, machines, know-how, credit, collaborations, and even participation in equity share capital nothing is now bitter to them. It may be a matter of concern for the communist countries that they are in the trap of economic growth (with capitalist collaboration and capital) with erosion of their communistic values and system. But the matter of which the non-communist countries cannot remain indifferent is about the "shadow" exchange rates of the communist countries. They are however substantial to them for the aim is to have periodical upward revaluations to attract more imports as they have little to sell in the world highly competitive and sophisticated markets but much to buy to build up a technologically advanced economy ; the imports are being financed by exchange manipulations, long-term credit, payment-in-kind and gold. It is for them to learn by experience that technology obsolesces and for a country like ours we should have by now learnt that the basis of trade with a communist country should be payment-in-kind and of credit fixed values of gold or its equivalent subject to mutual changes. The lasting solution is to force the communist countries to become the members of the IMF. Their entry in the comitty of capitalist finance will also help modify the capitalist outlook in the international financial system.

Railway Budget

[*Extracted from the Speech of the Railway Minister delivered in Lok Sabha on February 20, 1975*].

Financial Results : 1973-74

In the last budget, we had recounted three factors, namely, the state of national economy, the deterioration in staff discipline and the impact of Pay Commission's recommendations as accepted and liberalised by Government, which caused a vast change in the financial performance of Railways in 1973-74. In the Revised Estimates it was assessed that the gross traffic receipts of the Railway Undertaking would fall short of the estimated amount by Rs. 93.20 crores. Similarly, it was anticipated that the working expenses, which had also been under heavy pressure, would over-run the original Budget Estimates by Rs. 34.77 crores, even after realising an economy of Rs. 17 crores. The dividend liability to General Revenues was, however, estimated to come down by nearly Rs. 4 crores. It was concluded that instead of earning a surplus of Rs. 23.86 crores the Railways will have a deficit of Rs. 99.75 crores.

The last quarter of the year, unfortunately, turned out to be worse than assumed and the revised freight target of 192 million tonnes could not be realised. It fell to 185 million tonnes, inclusive of departmental traffic. Shortfall also occurred in passenger traffic due to suspension of some train services. Thus when the accounts for the year were finally compiled, gross traffic receipts were found to be Rs. 32.11 crores less than the Revised Estimates. A silver lining in the cloud was that the working expenses also went down by about Rs. 18 crores. While the appropriations to Depreciation Reserve Fund and to the Pension Fund were maintained at Rs. 115 crores and Rs. 16 crores respectively, the dividend liability to General Revenues, on actual computation, came to Rs. 170.92 crores against the Revised Estimate of Rs. 168.60 crores. The year-end deficit which was assessed at Rs. 99.75 crores in the Revised Estimates rose to Rs. 115.51 crores. The Railways could not discharge in full their dividend liability as the balance in Revenue Reserve Fund, after borrowing from General Revenues, fell short of actual requirements by Rs. 15.79 crores. The liquidation of this liability was carried over to 1974-75. Excluding this sum of Rs. 15.79 the indebtedness of the Railways on 31st March, 1974, rose to Rs. 208.02 crores. 1973-74 was truely, in all respects, a depressing year in the financial history of the Railways.

Revised Estimates for 1974-75

Right from the beginning, 1974-75 was seen as a year of stress and strain. The Budget Estimates for 1974-75 projected a deficit of Rs. 52.79 crores. Shortly after the May strike was called off, a rapid re-appraisal revealed that in the three months of April to June, 11.8 million tonnes of freight traffic had been lost. It was realised that the originating traffic during the year would not exceed 197 million tonnes, made up of 173 million tonnes of revenue earning traffic and 23.8 tonnes of departmental traffic. Passenger traffic had also declined as the number of passengers carried was nearly 150 million less than in the corresponding period of the previous year. Other Coaching earnings had also suffered. Consequently, in the first quarter railway earnings dropped by Rs 92.45 crores as compared with the Budget proportion. The trend of earnings foreshadowed a shortfall of approximately Rs. 140 crores during the year. In this situation, fares and freight rates had to be raised to recoup the anticipated deficiency of Rs. 140 crores in earnings. This postponement reduced the current year's effect of adjustments by about Rs. 5 crores.

At the same time, working expenses were rapidly mounting up. Railways are a labour intensive organisation and the wage bill of million and a half employees constitutes the bulk of their running expenses. Staff costs during 1973-74 had risen steeply for reasons referred to earlier. The year 1974-75 saw no abatement in this trend as three retrospective revisions in the rates of dearness allowance imposed a further burden of Rs. 56.44 crores. Moreover, an additional liability of Rs. 50,37 crores arising out of Labour Tribunal Awards and other concessions to organised labour (Rs. 28.50 crores) and increase in coal prices (Rs. 9.70 crores) had to be taken into account. The aggregate financial implication of all the unbudgeted factors was calculated to be Rs. 106.81 crores. However, in September last, supplementary grants for only Rs. 56.44 crores were obtained, which were just sufficient to cover the cost of three increases in dearness allowance. The balance amount of approximately Rs. 50 crores was promised to be saved from working expenses through further intensification of economy measures.

It was recognised that the revised traffic projection for the current year could be reached only if the monthly level of traffic carried in the remaining months was approximately 15 million tonnes, gradually rising to 16 million tonnes. Our transportation performance has been eminently successful as the Railways during November and December have lifted over 15 million tonnes each month. The offerings of foodgrains, fertilizers, POL products and cement have been fully moved. The daily coal loading in November, 1974 averaged 8516 wagons against 7300 only six months ago. This performance was raised further in December last with an average of 8638 wagons per day. Even this record was surpassed in January, 1975 when an average daily loading of 8901 wagons was attained. In the result, the total originating freight traffic during the current year is now anticipated at about 192 million tonnes despite the loss of 11.8 million tonnes in the strike affected period. The revenue earning content is estimated at about the same level as assessed in August last. This target connotes an increase of about 7 million tonnes over the achievement of last year. If departmental traffic is excluded and only revenue earning traffic is compared the increase over the last year's level would be nearly 10 million tonnes.

Passenger traffic has belied estimates. The Railways during the first eight months of this year have carried 220 million passengers less than the corresponding period of last year. The Revised Estimates of passenger earnings have, in the circumstances, been placed at Rs.405.85 crores or Rs. 15 crores less than the Budget Estimates. Following cancellation of passenger trains, the associated coaching traffic has also fallen. The revised estimate of 'Other Coaching' traffic has had to be scaled down to Rs. 68.58 crores. Good earnings have been retained at Rs. 899.82 crores, which was the budget anticipation. Sundry earnings as estimated are likely to be realised. Consequentially, gross traffic earnings are now estimated at Rs. 1413.15 crores or Rs. 20 crores less than the budgeted figure. We had provided that cash realisation would be six crores short of the value of our physical output. This amount is likely to go up to Rs. 12 crores, as the payment of our dues is not so prompt. In the aggregate, gross traffic receipts are, therefore, expected to be Rs. 1401.15 crores—Rs. 26 crores less than the Budget Estimate of Rs. 1427.15 crores.

The Railways were set an economy target of Rs.50 crores in working expenses. The promised saving of Rs. 50 crores has been fully achieved. The saving has come in handy as our budget for working expenses can absorb the shock of three instalments of dearness allowance recently sanctioned by Government, which will cost the Railways Rs. 39 crores in the current year. The Revised Estimates of working expenses have, therefore, been fixed at Rs. 1191.55 crores or Rs. 13.26 crores less than the extent grants. Appropriations to the Depreciation Reserve Fund of Rs. 115 crores and to the Pension Fund of Rs. 16 crores, as provided in the original budget, remain unchanged. The dividend liability to General Revenues, for the current year, is expected to be Rs. 189.33 crores. The drop in gross traffic receipts, payment of enhanced dearness allowance and variations in the amount of dividend liability to General Revenues have altered the financial results at the year-end. The mid-year appraisal had shown that the deficit of Rs. 52.79 crores projected in the budget estimate would rise to Rs. 109 crores. After allowing for Rs. 5 crores on account of deficit introduction of the revised tariff, a drop of Rs. 26 crores in gross traffic receipts and after adding Rs. 39 crores for payment of dearness allowance, the deficit should have gone up to Rs. 179 crores. The saving of over Rs. 50 crores in the working expenses, to which I have referred, would help to bring it down to Rs. 128.19 crores.

Plan Outlay for 1974-75

For plan outlay in 1975-76, the Railways have been allotted Rs. 308 crores, excluding Rs. 10 crores for Metropolitan Transport Projects outside the Railway Plan and Rs. 10 crores for investment in State Road Transport Undertakings. The allocation is even less than the reduced allotment for the current year and, in the background of appreciable increase in material prices and wage rates, the physical content of the development plan will naturally be compressed. In these circumstances, it is only correct that in distributing the resources, the proper maintenance of existing assets should receive paramount attention.

Railway Convention Committee

The Railway Convention Committee, in its latest report in December 1974, has recommended, and the Parliament has approved, that, in addition to continuing the various concessions given earlier,

(Continued on page 183)

Multinational Corporations—Their Impact on Indian Economy

R. K. Sinha*

Of late, there has been a great surge of interest in all aspects of the operations of multinational corportions. Multinational corporations, by definition, are gaint institutions operating in many countries. It is but natural that anything big evokes fear and distrust as much as respect and admiration. For some the multinational corporations are an invaluable dynamic force and instrument for the wider distribution of capital, technology and employment ; for others, they are monsters which our present institutions, national or international, cannot adequately control, a law unto themselves which no reasonable concept of the public interest or social policy can accept.[1]

Ever since the publication of Le Defi American by Jacques Servan-Schreiber in 1967, multinational corporations are a subject for 'debate within nations as among nations. However, in the historical perspective, it is not American in its origin nor it is of concern to Europe only. The phenomenon is global in dimension and is anchord in the past. The dangerous potentialities of the multinational corporations exploded on the world scene during the last dollar crisis.[2]

Important among ths issues which have been raised are : How much influence does global corporations exercise on government foreign policy decision ? Do their operations dislocate national economies ? What effect do they have on world trade and currency flows ? Have they grown too big to handle by the nation states, in whose territories they operate ?

Several hundred years working of the multinational corporations shows that they have not hesitated to thwart national governments and bring about authoritarian rule or advances imperialism. The East India Company ruled a fifth of the world's population for two and a half centuries. In 1930's United Fruit Company[3] commanded so enormous a pressure in Latin America that it could topple governments,

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control 4 million acres of land from Cuba to Ecuador and earned the nickname 'Octopus'.[4] In Africa, Liberia was once known as Firestone Republic. Sometimes these multinational corporations do battle even with the governments of mighty countries.

In recent years there has been an intense revival of interest in the affairs of these corporations both among academic economists and official experts of the government. Equity participation by the private investors abroad is being canvassed more vigorusly in recent years compared to the 1950's and 1960's. As a matter of fact, a study of multinationals is basically a study of the nature and process of private direct overseas investment of American and European corporations.

I

There is no agreed definition of the multinational corporation. Some find its determining characteristic in the organisation of its activities, i.e., the extent to which its operations in different countries are actually co-ordinated by a corporate centre, or the degree of "global outlook" to be found in its decision making. Others use as criteria the number and type of its subsidiaries, the number of countries in which these subsidiaries operate, and the proportion of foreign sales, assets and employment in its total sales, assets and employment. Still others look to the nationality mix of its management or to its ownership characteristics. For one authority on the subject of multinational corporations, the best way of providing a definition is "through" induction and interference". According to him they are invariably large in size, that they operate in a substantial number of countries, that they have access to a common pool of human and financial resources, and that they control their widespread activities rather than serving merely as exporters or licensers of technology.[5]

Without the straitjacket of a rigorous definition, the above approach permits a review of the characteristics and activities of multinational corporations. As a matter of fact it leads to an understanding of the element which such corporations have in common, even while drawing attention to their diversity.

Of the 100 largest economic units in the world, 50 are nation states and 50 are multinational companies.[6] For the major multinational corporations of U.S.A., Japan and European countries, it has been estimated that sales have been growing by about 10 per cent a year, while the real gross national product over the world has, on average, been increasing at only about half the rate.

Again because of the lack of a definition, the number of corporations considered to qualify as multinational varies widely.[7] By one definition, a multinational corporation is one with sales above $ 100 million, operating in at least six countries and with overseas subsidiaries accounting for at least 20 per cent of its assets. Some 4,000 corporations qualify, accounting for 15 per cent of the gross national product.[8] The 20 biggest have been listed in Table 1.

Table 1 : Biggest Multinational Corporations

Name	Base	World sales (in billions)
General Motors	US	$ 28.3
Exxon	US	18.7
Ford Motor	US	16.4
Royal Dutch/Shel	Britain Netherlands	12.7
General Electric	US	9.4
IBM	US	8.3
Mobil Oil	US	8.2
Chrysler	US	8.0
Texaco	US	7.5
Unilever	Britain Netherlands	7.5
ITT	US	7.3
Gulf Oil	US	5.9
British Petroleum	Britain	5.2
Philips	Netherlands	5.2
Volkswagen	Germany	5.0
Westinghouse Electric	US	4.6
Du Pont	US	3.8
Siemens	Germany	3.8
ICI	Britain	3.7
ICA	US	3.7

Source : Round Table No. 96 p. 18.

The growth of multinational corporations can be seen in a number of ways. In the case of 187 US multinationals that have been subject of intensive study, the number of their manufacturing subsidiaries have practically doubled between 1950 and 1959 and then almost doubled again by 1967. In Europe the rate of growth of such subsidiaries in the second period was even greater. If the total direct investment[9] in foreign countries is taken as the measure, the figures given in table II demonstrate a similar growth. The total value of US investment abroad, more than doubled, while the value of such investment in Europe almost quadrupled.

Table 2

Book Value of US Direct Investment Abroad (Million US $)

Area	1950	1960	1965	1970*
Africa	287	925	1,918	3,476
Asia	1001	2291	3569	5613
Canada	3579	11198	15318	22801
Western Europe	1733	6681	13985	24471
of which EEC	(637)	(2644)	(6304)	(11695)
Latin America	4576	9271	10886	14683
Rest† of World	612	2412	3798	7048
All areas‡	11788	32778	49474	78090

*Provisional figures.

† "Latin America and other Western Hemisphere" in the source.

‡ Owing to rounding, the totals given in the table may not correspond to the sum of the figures shown in each column.

Source: Survey of Current Business (Washington DC, US Department of Commerce), August 1963, pp. 18-19, Sept. 67, p. 42, Octo. 1970, p. 31 and October 1971, p. 32. as qnoted in Multinational Enterprises and Social Policy, op. cit. p. 6.

An analysis of the distribution of US investment abroad shows that in 1970 its direct investment in industrialised countries amounted to US $ 53,100 million, or 68 per cent of the total, while US $ 21,400 million, or 27.4 per cent of the total was located in developing countries.[10] In spite of the huge investments of US capital in Europian countries, there was an approximately equal long term investment by European countries in the United States in 1970.

As a matter of fact, the rapid growth of direct investment was not limited to United States, the United Kingdom and Canada. In the first half of the 1960s France more• than tripled its annual direct investment abroad, while those of the Federal Republic of Germany increased nearly five times and those of the Netherlands by more than 30 per cent.

Foreign investment of the multinationals has tended to be concentrated in certain areas, although the degree of concentration has shifted over time especially during the past two decades. Table 2 also shows the changing geographical distribution of US direct investments abroad during the past two decades. Most striking is the shift from Latin America, which accounted for over one-third of

US direct investments abroad in 1950 but less than one-fifth in 1970 and the corresponding increase in US direct investments in Western Europe, where they more than doubled. From the point of view of the distribution between developed and develeping countries, the shift is even more marked. As shown in Table 3, in 1950 these two groups of countries shared US foreign investment almost equally, but by 1970 the developed economies had increased their share to more than three-fourth. The same is the case with the United Kingdom. The deveping countries' share of its total assets abroad fell from 37 per cent in 1960 to 30 per cent in 1968.[11] For the Federal Republic of Germany, the cumulative flow of investments to developing countries was increasing between 1961 and 1970 but in absolute terms it was proportionately less than that going to industrialised countries. For instance, at the end of 1964, of a total of DM 7,205 million in direct investment abroad, 67.2 per cent or DM 4,843.4 million was invested in industrialised countries.[12] In the late sixtees there was a sharp rise in the establishment of subsidiaries of European, Japanese firms in South East Area, mainly in the field of electrical/electronic equipment and instruments. Not only have these establishment multipled at a rapid rate, but an increasing portion of their production is brought back to the home country for further processing and/or sale. As a matter of fact this development represents a significant change from the previous pattern of goods manufactured abroad being sold in the country of production or in other foreign markets.

Table 3

Percentage Distribution of US Direct Investment between Developed and Developing Nations

	1950	1955	1960	1970
Developed market economies	48.3	54.0	60.6	68.0
Developing countries	48.7	42.9	35.1	27.5
International, unallocated	3.0	3.1	4.3	4-5

Source : Multinational Enterprises and Social Policy, op. cit. p. 10.

In the socialist countries the scope for foreign capital investment has been very restricted. In the East European countries foreign private companies have been allowed to operate under agreements for limited purposes. These companies are generally limited to selling specialised equipment to a counterpart government corporation and providing the management and technical services needed to launch the venture. Often such ventures are termed "turnkey operations." Yugoslavia has gone further along the road towards joint ventures with multinational corporations than any of the other Eastern Europian countries.[13] As data on such investments are not readily available, it is difficult to say anything more conclusively about the performance of multinationals in the socialist countries.

Table 4

Percentage Distribution of US Direct Investment Abroad by Major Industrial Sector

Industrial sector	1955	1960	1965	1970
Mining and smelting	11.4	9.4	7.9	7.8
Petroleum	30.3	33.9	30.9	27.9
Manufacturing	39.1	39.1	39.1	41.3
Other industries	25.4	22.0	22.0	23.0

Source : Survey of Current Business, August 1957, p. 24, Aug. 1963, pp. 18-19 Sept. 1967, p. 42, Oct. 1970, p. 31 and Oct, 1971, p. 32.

It is interesting to note the concentration of multinational corporations in certain fields of industries. Generally airlines and steamship companies operate multinationally as do some banks, insurance firm and commercial establishments. In recent times some shifts have taken place in the industrial sector in which these firms were prominent prior to 1950s and 1960s. Table 4 shows that during 1955-70 there was a definite increase in US direct investment abroad in the manufacturing industries and a corrosponding decrease in mining and smelting and in petroleum. By and large, foreign investment by multinationals has a tendency to gravitate to industries showing one or more of the following characteristics : (1) a high initial capital outlay, (ii) a rapid growth rate, (iii) a high level of technology, (iv) a rapid rate of replacement in the technologies used, and (v) a high degree of concentration in the home country. Taking multinationals as a whole, we find that they have established complete domination in rubber tyres, oil, tobacco, pharmaceuticals, and motor vehicles industries.

II

Due to their sheer sizes and the world wide nature of their operations, the multinational corporations are bound to have a considerable economic and political impact in our country. Power economies is the keystone of power politics and in this the multinationals have always played a heinous role.[14] The power economies of the multinationals is a very important factor of current power politics in the contemporary world. The East India Company which ruled India is one amongst the many examples. By and large, multinationals have no national allegiance at all and national boundaries are of no significance to them. They pride themselves on being the agents of economic development, international prosperity and world peace, and maintain that they are seeking a profitable opportunity in addressing themselves not to the demands of the privileged few, but to the urgent needs of the overwhelming many. As a matter of fact, if the overwhelming many is a reference to the developing countries like ours, we are very well aware that the multinationals themselves are the "privileged few" and they act in their own interest.

In such a situation, therefore, allowing them to operate in India would be contrary to our best national interest. Not only would they exploit our people and drain the country of its resources, but they would also exert a pernicious influence on our socio-cultural and political institutions. As stated earlier, equity participation by private investors abroad is being canvassed by our government vigorously in recent times. In official circle also naked advocacy of free enterprise philosophy and talk of open door policy towards foreign private capital have become quite popular. Therefore, it is necessary to reexamine issues relating to foreign equity participation in our industries.

Table 5

Outstanding Foreign Business Investment in India by Type

(Rupees million)

Type	Dec. 1955	Dec. 1961	March 1966	March 1968
A. Direct Investment	3865	5273	6976	7012
1. Branches	2431	2703	2441	2591
2. Foreign Controlled (Rupee Company)	1434	2569	3835	4421
B. Portfolio Investment	559	1526	4417	8416
1. Equity	892	443	570	752
2. Creditor Capital	167	1083	3347	7664
C. Total	4424	6798	10693	15428

Source : Round Table No. 110, April 28, 1974, p. 7.

Views on the role of private foreign investment, its benefits and costs are extremely divergent. Some even regard this as a mere extensions of gun-boat diplomacy of the imperialistic powers of the 19th century. The gains that are generally associated, apart from filling in the resource gap, are transfer of technology and skills, development of technical and managerial skills, stimulus to improve the efficiency of domestic enterprises by emulating foreign enterprises' contributions to tax revenues, offer of employment opportunities and increased incomes. One has, however, to weigh these benefits against the several diseconomies associated with these investments. Important among these diseconomies are direct costs involved in payment of royalties, technical fees, dividends and interests ; creation of a foreign enclave ; insufficient development of domestic skills ; gobbling up of whatever talent we have ; a greater continuance on import inputs, inhibiting development of domestic substitutes and so on.

Many of the above mentioned diseconomies do not exist at all and foreign investment per se cannot be decried for most of these. As a matter of fact much of these diseconomies would depend on the environment in which such investment takes place, the type and nature of such investment and also the policies pursued by our government.

The flows of foreign investment into India became more impressive only when the country embarked on a programme of rapid industrialisation. Outstanding foreign business investments in India rose from Rs. 4,424 million in December 1955 to Rs. 15,428 million in March 1968 to Rs. 16,430 million in March 1971.

A basic tenent of India's foreign investmeut policy has been the acquisition of major interest in ownership and effective control of enterprises. Towards the aim fresh investments in foreign branches were sought to be restricted while attempts were made to reduce the extent of foreign holdings in subsidiaries. As indicated in Table 5, the pattern of investment flows in recent years would suggest that this is slowly being brought about. Among the various types of foreign investment, the share of risk capital has declined over the years, from around 96 per cent in early fiftees to around 50 per cent in the late sixtees. Of the risk capital, there was a steady decline in branch investment, while the share of portfolio equity was more or less steady.

A significant feature of foreign investment in the sixtees was the impressive growth in technical collaboration agreements. The import of technology embraced a variety of forms—licences, production know-how, plant construction, pre-investment services, patents and training of personnel.

However, the major areas of concern with regard to foreign investment appear to centre around the foreign exchange cost of collaboration proposals, the duration of agreements, the restrictive features of such proposals and the extent of over import of technology. By and large, there is also a feeling that dependence on foreign technology would lead to reduce activity within the country on research and development. The research policies adopted, if at all, by the foreign firms would not be in consohance with our interests. There is no denying the fact that in recent years private foreign investment has played a substantial part in transferring capital and skills but this is not necessarily the same thing as contributing to development. As a matter of fact there are wide differences of opinion on the impact that private foreign investment has had in the past, and on the part it might play in the future. The basic problem is that the interests of foreign companies and our government are not necessarily the same.

Much of the technologies introduced into our country not suited to our requirements because they have been evolved and designed for large scale production and reflecting the fact that capital is cheap compared with labour. It may therefore be questioned whether the type of technology introduced into India is always well-adopted to the new environment. One authority has rightly observed that there may be a misuse of local resources in so far as "too much capital and too little labour are used, given the relative price and supply of those local factors"[15], as in many if not most large scale manufacturing operations, the opportunity for choosing from among available technologies a more economically efficient and at the same time labour intensive technique is extremely limited.[16]

The political consequences of multinationals have to be viewed in the context of both domestic and foreign economic policies. As regards economic policy the multinationals tend to curb economic sovereignty mainly by using political pressures to stop enactment or imposition of measures which check or control their operations. Tax evasion and tax avoidance become intractable. And in the case of developing countries like ours, there is also the additional problem of competitive tax concessions. The repatriation of profits by multinationals is determined not on the basis of balance of payments in host country but by their own global interests. In the sphere of employment, as stated earlier, the development of high technological industries distorts the wage and income structure and also discourages labour intensive production.

The multinationals have an ambiguous and ambivalent attitude towards tariffs. By and large they overcome tariff barriers by restoring to techniques, important among them are product differentiation, differential power prices, products and services and hedging transaction in various currencies. In a word, the trouble with multinationals is accountability, and the deprivation of economic, political and even cultural self-determination and economically sound self-reliance. Business is world wide ; government or law is not. Consequently multinationals are free of control. And lacking accountability, they lack legitimacy. For a government or a multinational to have legitimacy, it must be responsible to people and institutions outside itself. Multinationals are free of such restraints. To whom are they responsible ? To those who govern them. Who are they ? A self-perpetuating oligarchy. Who selected them ? They selected themselves as has been answered by E. S. Mason a decade ago.

In such a situation allowing them to operate in India would be contrary to the best national interest. As a matter of fact, even the single national monopoly capitalist from abroad is a danger to our nation, it gees without saying, the multinationals are still more dangerous.

Notes & References

1. Multinational Enterprises and Social Policy, International Labour Office, Geneva, p. IX. 1973.
2. Long before President Nixon announced the first devaluation of the dollar on August 15, 1971, these corporations had started shifting their funds from dollars to safer currencies. The Singer Company alone exchanged 20 million U.S. dollars for Swiss frances in one deal on August 13. Others were doing much the same.
3. Presently known as United Brands.
4. Multinationals : Background. Weekly Round Table No. 96. Dec. 9, 1973, p. 18.
5. Raymond Vernon : Sovereignty at Bay : The Multinational Spread of US Enterprise, London, Longman, P. 4, 1971.
6. Norman Macrae : "The Future of Enternational Business," in the Economist (London) 22 January, 1972. P. XXI.
7. One authority estimates that there are between 75 and 85 US Companies that qualify, a similar number of continental European Companies and between 35 and 68 British Companies (see Sidney E. Rolfe and Walter Damm (eds) : The Multinational Corporation in the World Economy : Direct Investment in Perspective, Praeger

Special Studies in International Economics and Development (New York, Praeger, 1960, P. 17). At the other extreme, the Union of International Associations in its 13th (1970-71) edition of the year book of international organisations (Brussels), lists 680 Corporations in the multinational Category (See PP. 1029 and 1035-1046).

8. Ganguli, B. N. : Multinational Corporations, S. Chand and Co. (Pvt) Limited, New Delhi PP. 2-3, 1974.
9. Direct investment includes assets used for sales and distribution purposes, inventory, and so on, as well as investments in all economic sectors, but excludes portfolio investments ; while it is more inclusive than a measure related solely to the productive facilities of multinational corporations in manufacturing and extractive industries, it nevertheless provides an indication of growth.
10. U. S. Department of Commerce : The Multinational Corporation, Vol. 1 : Studies on US Foreign Investment, p. 13.
11. UNCTAD, Secretariat : Restrictive Business Practices, US Conference on Trade and Development. April 72, p. 19.
    Also see W. B. Reddaway : Effects of U. K. Direct Investment Overseas. An Interim Report, University of Cambridge, Department of Applied Economics, Occasional Papers, No. 12, 1967 pp 193-194.
12. Monthly Report (Deutsche Bundesbank), Dec. 1965, p. 26.
13. During 1967 the Yugoslav Foreign Investment Law was amended to permit joint ventures by Yugoslav and foreign companies.
14. Ganguli, B. N : Multinationals : Economic and Political Impact, Round Table, No. 96, December 1, 1973, Delhi, p. 26.
15. Remond Vernon, op. cit., p. 181.
16. Terutumo Ozawa : Transfer of Technology from Japan to Developing Countries, UNITAR Research Reports, No. 7, 1971, P. 13.

India : General Index of Industrial Production (crude)

(Base : 1960=100)

Month	1973	1974
January	207.4	206.0
March	211.3	210.0
May	190.7	202.6
July	199.1	203.5
September	199.3	
November	207.6	
December	222.0	

Population Trap and Planning in India

G. Raghava Reddy and K. Munidoraswamy Naidu*

1. The United Nations has designated 1974 as "World Population Year" to focus the attention of the Government and people on this baffling problem. The population of the world is estimated to be about 4000 million. Its average rate of growth is 2 per cent and at this rate the population will double itself in 35 years. It is also estimated that in the beginning of the next century 1000 million people will be added to the stock of population every 7 years. The growth of population at this rate poses innumerable problems for the future of mankind. It is one of the most urgent and baffling problems of the contemporary world contributing to several politico-socio-economic crises. Unless a rational and human population policy is evolved it will lead to several explosions. According to Robert S, McNamara "it will explode in suffering, explode in violence, explode in inhumanity."[1]

The Dynamics of Population Growth and Economic Growth

2. Population growth takes place because of the excess of births over deaths. The factors that contribute to this disequilibrium have been matters of speculation and concern throughout human history. The theory of population evolved by T. R. Malthus (1766-1834) is one of the important landmarks in the development of demography. Malthus felt that economic progress in the initial stages stimulates the growth of population by reducing the death rate. He even linked it to a race between food supply and population growth in which the former lags behind because of the arithmatic ratio at which it expands and the latter outstrips because of the geometric ratio at which it grows.

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[1] The American Review, Autumn, 1974, p. 4.

According to him the growth of population is limited by the means of subsistence though he added some preventive checks such as moral-suasion in his revised theory. The developments in demography and economic history in the nineteenth century have refuted this theory though it seems to be operating in the 20th century in under-developed countries.

Some of the under-developed countries are experiencing a rate of growth of 3.5 per cent and therefore the problem has become more acute for them. It is now well established that if a population growth rate of one per cent takes place, the population will double in 70 years and quadruple in 140 years. If the growth rate is 2 per cent only half of time is enough for doubling and quadrupling the population.[2] If the growth rate is 3 per cent 25 years are enough to double a country's population. These laws of demography are hardly called into question because of growing statistical evidence. As economic growth is essentially a function of capital formation and it is very difficult to step up the rate of economic growth in view of the problems of capital formation in developing countries.[3] Planning has been adopted to give a big push to economic growth. But in the race between the two rates of growth, economic growth has been lagging behind and consequently the under-developed countries are caught in a low level equilibrium trap. Unless their levels of living are raised their population growth rate will not decline and unless it declines their levels of living will not improve. Unless a growth strategy is designed and operated the under-developed countries cannot be saved from this trap. Emphasis on accelerating the rate of economic growth neglecting the population front has led to the failure of planning in many countries. Therefore, economic planning must aim at increasing the growth rate of the economy and reducing the rate of growth of its population. Successful planning must overcome the demographic transition by a positive population policy.

The Theory of Demographic Transition

3. This theory postulates that there are three stages in demographic growth. In the initial stage of economic development both birth and death rates are very high, say, around 40 to 45 per

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[2] W. Arthur Lewis, Theory of Economic Growth, George Allen and Unwin Ltd., 1970. p. 307.

[3] Ragnar Nurkse, Problemes of Capital Formation in Under-developed Countries, Oxford University Press, 1953, pp, 5—10.

thousand, due to illeteracy, early marriages, deep-rooted social beliefs and customs about the size of the family and lack of knowledge about the techniques of family planning. Consequently, the rate of growth is almost nil and the population is stable. It is considered to be a stage of high growth potential but of low actual growth.

As the society evolved from the primitive stage and transformed itself into an agricultural one from that of 'hunting' and 'gathering' and as appropriation of land and accumulation of capital began to take place leading to greater production, death rate was lowered, say, from 40 to 30 per thousand, and this was further reduced say, from 30 to 20 per thousand, as a result of the development of industry, transport and communication facilities and medical services. As a consequence of this, birth rate remaining high, high growth potential of the first stage is realised in the high actual growth in the second stage. This accelerates the growth of population.

As the society further develops into an industrial one with urbanization and growing educational and medical and health services death rate as well as birth rate begins to fall. Urbanization coupled with changes in occupational structure and social status of men and women brings a radical change towards the number of children to be given birth to.[4] In this context A. J. Coale and E. M. Hoover observe, that "the development of economic roles for women outside the home, tends to increase the possibility of economic mobility that can better be achieved with small families, and tends to decrease the economic advantages of a large family. One of the features of economic developments is typically increasing urbanization, and children are usually more of a burden and less of an asset in an urban setting than in a rural".[5] Hence at higher levels of economic activity combined with a high degree of industrialization and urbanization both birth and death rates fall to around 10 to 15 per thousand and the population growth is arrested. "All these are fruits of economic growth, so there seems to be justification for concluding that it is economic growth which brings down the birth rate and so restores the equilibrium which economic growth itself originally destroyed."[6] This is what has happened to a large extent in Western Europe, but is most unlikely to happen in Asia, Latin America and Africa as these countries are caught in a Malthusian Trap, popularly known as 'Low Level Equilibrium Population Trap'.

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[4] Charles P. Kindleberger, Economic Development, Mcgraw Hill Book Company, Second Edition, pp. 274—276.

[5] Coale, A. J. and Hoover, E.M. : Population Growth and Economic Development in Low Income Countries, Oxford University Press 1959, p. 11.

[6] W. Arthur Lewis, Theory of Economic Growth, George Allen and Unwin Ltd., 1970, p. 313.

Low Level Equilibrium Population Trap

4. Most of the under-developed countries are over-populated by almost any criterion and desperately need to escape themselves from the low level equilibrium population trap. The following table reveals the demographic situation of the different regions of the world.

World Population and its Growth Rate by Regions

World/Region	Mid Year Population in Millions			Annual Rate of Increase (1965-71)
	1960	1965	1971	per cent
World	3005	3289	3706	2.0
Africa	278	303	354	2.6
North America	199	214	230	1.3
Latin America	213	246	291	2.9
Asia	1660	1833	2104	2.3
Europe	485	445	466	0.8
Oceania	15.5	17.5	19.8	2.1
U.S.S.R.	214	231	245	1.1

Source: U. N. Statistical Year Book, 1972, p. 8.

While Europe and North America belong to the low growth potential region of the world with 0.8% and 1.1% growth rates respectively, Asia, Africa and Latin America belong to high growth potential regions with the annual growth rates of population of 2.3%, 2.6% and 2.9% respectively.

The latter are passing through a stage in which their *population growth rates* exceed their *economic growth rates.* In most of them improvements in medical and health facilities have led to a steep fall in death rates whereas the birth rates are almost unaltered. Consequently, they are experiencing rates of population growth ranging from 2.5 to 3.5 per cent per annum, whereas the rate of growth of per capita income is less than this and this poses a great challenge to the political, social and economic institutions and values of not only these regions but also of the entire world. They simply cannot afford to wait until the laws of demography operate on their own as the consequences of that course will be terrible and cruel.

Population Growth Trends in India

5. About 15 per cent of the world's population lives in India, which, however, constitutes only 2.4 per cent of the world's land area. India's population is now estimated to be more than 580 millions, the rate of growth being 2.2 per cent per annum over the past decade. The trend of population growth in India is presented in the table below.

Growth of Population in India (1901-1971)

Census Year	Population (in crores)	Decennial increase or decrease (in crores)	Percentage increase or decrease during the decade
1901	23.6	—	—
1911	25.2	+ 1.6	+ 5.7
1921	25.1	– 0.1	– 0.3
1931	27.9	+ 2.8	+11.0
1941	31.9	+ 4.0	+14.2
1951	36.1	+ 4.2	+13.3
1961	43.9	+ 7.8	+21.5
1971	54.8	+10.8	+24.8

Source : Compiled from Census of India, 1971.

1921 is the turning point in the population growth of the country. Before that year there was no population problem as such. In fact, between 1916 and 1921 there was a small decline in population. But afterwards, population of the country has been expanding rapidly, as can be seen from the table above. During the decade 1961-71 the growth rate of population was 24.8 per cent as compared to the growth rate of population of 21.5 per cent during 1951-61. This is primarily due to high birth rates and low death rates. Between 1901 and 1970 birth rate has fallen from 48.1 to 37.0 per thousand, whereas death rate has declined steeply from 42.6 to 15.9 per thousand during the same period. As a consequence of this persistently high birth rate but a relatively fast declining death rate India's population began to grow by rapid strides. Every year 21 millions are born and 8 million deaths occur and hence annually 13 million people are added to India's population. If this trend continues, by the turn of the present century India's population will be around 1230 millions.

In terms of resources—natural, capital and human—India is already over populated and at least half of her problems are due to this baffling population problem. India is caught in the low level equilibrium population trap like many under-developed countries. This becomes clear if we examine the growth of population and the growth of per capita income. During the decade 1951-61, the period of First and Second Five Year Plans, population was growing at an annual rate of 2.15 per cent, whereas per capita income at constant prices has increased at the rate of 1.89 per cent per annum. Between 1961 and 1971 population growth rate was 2.48 per cent while the growth rate of per capita income at 1960-61 prices was only 1.34 per cent.[7] This clearly implies that India is caught in the low equilibrium population trap.

The Consequence of Population Trap

7. Stephen Enke argues that rapid expansion of population, by diverting resources to unproductive uses, under conditions of lower population growth, would go towards increasing the capital stock per worker, reducing rates of per capita income.[8] He calls excessive population growth as the most important single cause of poverty in under-developed countries. The age structure in these countries is unfavourable to economic growth as about 40 per cent of the total population is juvenile as against 26 per cent in advanced countries. It implies that on an average the dependancy load is higher in the former areas compared with the latter. Consequently, the quality of the human resource suffers. No wonder the people of the under-developed countries are less rigorous in terms of health, education, enterprise, and motivation, thereby undermining their contribution to economic development.

Population growth has a significant impact on social system because it has a tendency not only to cause fragmentation of holdings but also to fortify the class structure, to make it more rigid and less egalitarian by increasing the number of the landless and the poor, and thus ever more inimical to the success of efforts to raise productivity in agriculture.[9] Excess of population in agriculture has inhibited whatever impulses there may have been for changes in the production methods and crop patterns that would increase the efficiency of agriculture and so the average indexes of yield have remained low.

The observation that in a given country the cultivated area per head of population or of agricultural population is small may mean

[7] Govt. of India, Economic Survey, 1973-74, p. 57.

[8] Stephen Enke, "Economic Consequences of Rapid Population Growth", The Economic Journal, December 1971.

[9] Gunnar Myrdal: Asian Drama, Vol. 1, p. 435.

that land resources are nearing exhaustion so that a unit of arable land has to carry the burden of an abnormally high number of people. Very often South Asia is considered to be very densely populated region as it has more people per unit of land than other tropical regions in Africa and Latin America. The average density of population of the whole region of South Asia is roughly the same as that of Europe, excluding USSR, and about four times that of the U.S.

Half the population of India lives in less than a quarter of the total available land, and one-third is concentrated on less than 6% of land. The highest concentrations of population are invariably found in those areas where conditions are favourable for the growing of wet paddy. In India, as in most South Asian countries, huge disparity between agricultural resources and the man-power stocked-up in agriculture exists, because the land is over-crowded and much of the available labour supply is unemployed or is employed at very low levels of productivity, often assumed to be zero at the margin.

Population Policy—How to Escape from the Trap

8. The experience of developed countries cannot be relevant in judging what policies ought to be applied in under-developed countries to escape them from the population trap. In developed nations birth control practices spread spontaneously because of the people. But we cannot imagine the spread of birth control practices in under-developed countries, characterised by rural, tradition-bound, illeterate and very poor population. The under-developed countries, therefore, have to spread birth control. Of course, there are certain inhibitions of religious nature and blind beliefs against adopting a public policy to spread birth control. The failure of India's family planning policy during the plan era, despite huge investments to have an appreciable effect on fertility, leads to this conclusion.

Many studies reveal that even though there is a sympathetic attitude towards accepting birth control, no positive and decisive will, strong enough to motivate birth-control, is forthcoming. In this ambivalence lies the essential difference between the situations in under-developed countries to-day and in developed countries at the time when birth-control was spreading there. The birth control policy must overcome this ambivalence. Robert S. McNamara points out that "Millions of individual families wish to avoid unwanted pregnancies. And when these families cannot find legal and compassionate assistance in these matters they often turn to desperate and illegal measures. In India, the estimate is that each month a quarter of a million women undergoes illegal abortion. In Latin America illegal abortion rates are among the highest in the world. The tragic truth is that illegal abortion is endemic in many parts of the world. And it is paticularly prevalent in those areas where there is no adequate organised family planning assistance.

Family Planning in India

9. The alarming rate at which population is growing calls for a positive population policy to arrest population explosion in India. It is imperative to make sustained efforts to motivate people to restrict their families. This cannot be achieved without transforming the attitude of the family. The need for such efforts has been recognised ever since the beginning of the First Five Year Plan. However, during the First and Second Plan periods the family planning programme was imelemented on a very limited scale. It was only in the middle of the Third Plan that family planning programme started taking a concrete shape. The emphasis was shifted from the clinical approach to the more vigorous extension of education approach for motivating the people for accepting the small family norm. Between 1951 and 1965 only one million sterilisations was performed and the use of conventional contraceptives was modest. During the Annual Plan period, viz., 1966-69 the programme began to take firmer roots.

On the eve of the Fourth Plan, the stage had been set for a vigorous promotion of family planning. The Fourth Plan recognised the high priority of the family planning programme and made a provision of Rs. 330 crores for it. It was aimed at reducing the birth rate from 30 per thousand in 1968 to 32 per thousand by the end of the Fourth Plan. To achieve this objective protection of 28 million couples by 1973-74 was envisaged. It was also decided that family planning would remain a centrally-sponsored programme for the next 10 years and the entire expenditure would be borne by the Central Government.

There has been a significant progress in respect of family planning programme. Significant achievements were made in setting up the infra-structure and making supplies and services available as well as in the mass extension and motivational efforts. During the course of the Plan there was increasing integration of health, family planning and maternity and child health activities. By organising many vasectomy camps, similar to that organised in Ernakulam District of Kerala, over two million acceptors of vasectomy were attracted. With effect from April 1, 1972, the Medical Termination of Pregnancy Act, 1971 came into force. During the plan, the commercial distribution of Nirodh has been encouraging. The sales were about 30 million pieces in 1969-70 and are expected to increase to 120 million pieces during the last year of the Plan. During the Plan period new schemes like the post-partum scheme was introduced. The following table gives the details of the targets and achievements of the Fourth Plan.

Targets and Achievements in the Fourth Plan

			Targets	Achievements
1.	Sterilisation	(Million)	15	10
2.	IUD insertions	,,	6.6	2.4
3.	Conventional contraceptive users	,,	10	4.1
4.	No. of couples protected (cumulative)	,,	28	19
5.	Birth rate (per 1000 population)		32	35

Source : Govt. of India, Draft Fifth Five Year Plan 1974-79, Vol. II, 1974 P. 252.

The gap between targets and achievements is due to lack of trained personnel and lack of staff mobility. There have been shortfalls in the programme. There was a set-back to the Intra-Uterine Device programme on account of shortage of lady doctors especially in rural areas and the reluctance of acceptors due to fear of complications. Regarding conventional contraceptives, periodic shortages in supplies caused shortfalls in performance.

During the Fifth Plan with an outlay of Rs. 516 crores, it is envisaged to bring down the birth rate from 35 per thousand to 30 per thousand, which calls for a much higher level of performance on a continuing basis throughout the Fifth Plan. During the Plan the following targets are expected to be achieved.

Sterlisation	18.0 million
Intra-Uterine Device	5.9 million
CC Users	8.8 million (in the last year of the Plan)

The approach to the Fifth Plan will be to integrate family planning services with those for health, MCH, nutrition. functional literacy, workers' education, health education, social welfare and other outlets. Population education will also be given greater stress. The concept of population education is of recent origin. It has emerged as a new curriculum area at the school stage as a result of socio-economic needs of the community. It includes knowledge, understanding, attitudes and skills which may help the individual to understand the implications of unrestricted population growth for himself, his family, state and the world at large and it may kindle in him the desire to mould his reproductive behaviour in favour of a small family norm and to influence others to do the same. Hence the rationale of population education and the need to spread it in the schools of the country. A selective approach will be used to obtain optimum results from the view point of demographic effectiveness and cost effectiveness. Conventional contraceptives both for males and females and the use of the IUD by females with lower parity will be promoted. The following table gives the details of the projections regarding the demographic factors.

Projections Regarding Birth, Death and Growth Rates

Period	Birth Rate (per 1000 of population)	Death Rate (per thousand of population)	Growth Rate (per thousand of population)
1971-76	35.57	15.23	20.34
1976-81	29.57	12.81	16.76
1981-86	24.82	11.14	13.68

Note : The projections relate to mid-year of the period.

Source : Govt. of India, Draft Fifth Five Year Plan 1974-79, Vol. 1, 1974. P.1

The realisation of the demographic projections of India constitutes a great challenge for family planning. At the existing levels of capital formation and capital-output ratio it is possible to push the economy forward and reach the "take-off" stage in the 1980's. It is a challenge for the statesmanship to achieve the demographic pattern visualised in the Fifth Plan.

Summary

10. Population growth is a great stumbling block for the economic development of under-developed countries and India is no exception. The advanced countries do not face this problem as they have avoided the population trap. Under-developed countries are caught in the population trap and hence cannot watch and wait for the usual operation of the demographic laws. Therefore, there is a strong case for a positive population policy.

Centre-States Financial Relations—II

Subhash Chandra Sarker*

Some discussions were held and it was decided in 1970 that the incidence of the additional excise duties should be stepped up to 10.8 per cent of the value of the clearances within a period of two to three years. With the implementation of this scheme yield from additional excise duties rose from Rs. 52.68 crores in 1968-69 to Rs. 105.97 crores in 1971-72 and is expected to rise to Rs. 175.52 crores in 1974-75 (budget). The Sixth Finance Commission noted the continued objective of the States to the continuation of the scheme but avoided committing itself one way or the other by saying that "the question of continuance or otherwise of additional excise duties does not come within our purview, we are only concerned with the limited issue of formulating a proper scheme of distributing of the revenue from additional excise duties among the States." (Para V. 4 on page 18 of the Report).

When the additional excise duties were introduced in 1957 in lieu of sales tax on sugar, textiles and tobacco the States had been provided the guarantee that the share of each State in the additional excise duties would not be less than the revenue realised from the levy of sales tax on these items for the financial year 1956-57 in that State. During the seventeen years that have elapsed since then, the receipts on account of additional excise duties have grown tremendously. Thus, additional excise duty receipts grew from Rs. 2.6 crores in 1957-58 to Rs. 144 crores in 1973-74 (budget estimate) or more than fifty-five times. The question is how after paying the guaranteed amounts to the States the balance (which is so much larger than the guaranteed amount) is to be distributed to the different States. (Four successive Finance Commissions declined to accede to the request of the State Governments to determine afresh the guaranteed amount to the different States). Unfortunately, there has been no unanimity among the States or the successive Finance Commissions on the adoption of any specific formula for determining the contribution made by each State to the divisible surplus of additional excise duty receipts. The Second Finance Commission had determined the guaranteed amount. The Third Finance Commission adopted the twin basis of growth of sales tax collections and population, the Fourth Finance Commission sought to give a greater weightage to collection than population while the Fifth Finance Commission placed a greater reliance on population to determine the share of each State. Broadly speaking, the economically more developed States canvass sales tax collection as the basis of calculation, while the poorer States (generally having a larger population) insist on population as the basis. The Fifth Finance Commission laid down the following principle. After deducting 2.05 per cent of the net proceeds of additional excise duty for the Union Territories, 0.83 per cent for Jummu and Kashmir, 0.09 per cent for Nagaland, the balance 97.03 per cent of the net proceeds should be distributed to the different States in the following manner :

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State	Guaranteed Amount (Rs. lakhs)	Percentage Distribution of Excess Amount
Andhra Pradesh	235.24	8.13
Assam	85.08	2.47
Bihar	130.16	8.40
Gujarat	323.45	6.33
Haryana	65.49	1.70
Kerala	95.08	4.84
Madhya Pradesh	155.17	6.34
Maharashtra	637.77	13.89
Mysore	100.10	6.00
Orissa	85.10	3.13
Punjab	96.07	2.98
Rajasthan	90.10	4.42
Tamil Nadu	285.34	9.63
Uttar Pradesh	575.81	12.99
West Bengal	280.41	8.75
	Total	100.00

Source: Paragrah 5.21 of the Report of the Finance Commission 1969, Pp 45.46.

The Sixth Finance Commission has recommended that it is no longer necessary to set apart any guaranteed amounts to the States since in view of the rise in revenue under this head there is no risk of the share of any State falling short of the revenue realised by that State in 1956-57 i.e. the guaranteed amount. The Commission has expressed the view that the "most equitable basis" for the distribution *of the proceeds of additional* excise *duties would be 70 per* cent weightage for population, 20 per cent for State Domestic Product and 10 per cent for production. The Commission has recommended that of the net proceeds of additional excise duties a sum equivalent to 1.41 per cent be distributed to the Union Territories and the balance of 98.59 per cent should be distributed among the States on the following basis : Andhra Pradesh 8.39 per cent, Assam 2.47 per cent,

States' Share of Additional Excise Duty

Name of State	Share in 1973-74 on the basis of Fifth Finance Commission Recommendation Actual Sharable pool (Rs. in crores)	Share in 1974-75 (as per revised formula of Sixth Finance Commission) Sharable pool (Rs. in crores)	Gain (+) Loss (−)
Andhra Pradesh	12.93	14.41	
Assam	3.80	4.24	
Bihar	12.23	16.08	
Gujarat	11.47	10.15	less (—)
Haryana	2.87	3.33	
Himachal Pradesh	1.11	1.01	less (—)
Jammu and Kashmir	1.39	1.25	less (—)
Karnataka	8.80	9.65	
Kerala	7.25	6.15	less (—)
Madhya Pradesh	9.80	11.99	
Maharashtra	24.44	20.01	less (—)
Manipur	0.30	0.29	less (—)
Meghalaya	0.26	0.29	
Nagaland	0.15	0.14	less (—)
Orissa	4.92	6.17	
Punjab	4.84	4 60	less (—)
Rajasthan	6.65	7.16	
Tamil Nadu	15.38	12.49	less (—)
Tripura	0.44	0.43	less (—)
Uttar Pradesh	22.65	27.65	
West Bengal	14.18	14.25	

Source : Statement IV Explanatory Memorandum : Central Budget 1974-75 p 28.

Bihar 9.31 per cent, Gujarat 5.91 per cent, Haryana 1.94 per cent, Himachal Pradesh 0.59 per cent, Jummu and Kashmir 0.73 per cent, Karnataka 5.62 per cent, Kerala 3.58 per cent, Madhya Pradesh 6.98 per cent, Maharashtra 11.65 per cent, Manipur 0.17 per cent, Meghalya 0.17 per cent, Nagaland 0.08 per cent, Orissa 3.59 per cent, Punjab 2.68 per cent, Rajasthan 4.17 per cent, Tamil Nadu 7.27 per cent, Tripura 0.25 per cent, Uttar Pradesh 16.10 per cent, and West Bengal 8.30 per cent. (Page 21 of the *Report of the Sixth Finance Commission, 1973*).

How the scheme recommended by the Sixth Finance Commission compares with the one prevalent up to 1973-74 has been given in the table at page 160.

Grants on Railway Account

Under Article 269 of the Constitution the State Governments were levying tax on railway passenger fares. In 1957 the Central Government took over the responsibility and levied a tax on railway fares as a percentage of fares which was subsequently allowed to be merged with the railway fares with the condition that the Railways would make to the Central Government every year a special payment for transfer to the States and that this special payment for transfer should equal to the average collection of passenger tax during the three years 1959-61. On this basis the quantum of grant for transfer to States was fixed at Rs. 12.50 crores. On the representation of the State Govenments the quantum was raised to Rs. 16.25 crores by the Fourth Finance Commission. This arrangement has been made against the opposition of the States, which wanted the reintroduction of the tax on passenger fares. Indeed, this arrangement has denied the States' access to considerable revenue which they would have had if they had been allowed to retain their own arrangement. The Fifth Finance Commission calculated that the States were entitled to a payment of Rs. 25 crores on this account rather than Rs. 16.25 crores paid to them. (Page 7.25 of the *Report of the Finance Commission 1969* p. 73). Although the Fifth Finance Commission ruled out the reimposition of the tax on passenger fares it strongly supported the demand of the States for a larger grant and urged the Railway Convention Committee to accept the same.

This was an evasion of its duty by the Fifth Finance Commission since the matter had been referred to it by the President under Article 280 (3) (c) to make a specific reeommendation. But far more irregular has been the conduct of the Railways which have collected the taxes, which should have gone to the States, but have failed to pay them the same in full. Indeed, the Railways are guilty of a violation of the Constitution. Article 269 (i) (c) states that terminal taxes on goods or passengers carried by rail, sea, or air shall be levied and collected by the Government of India but shall be assigned to the States in accordance with principles of distribution to be determined by Parliament. In practice, Parliament endorses the recommendations of the Finance Commission.

The only equitable basis for determining the quantum of grant under this category is to relate it to passenger traffic and passenger earnings from the non-suburban section of the railways which accounts for 80 per cent of the total passenger kilometres and fetches nearly ninety per cent of the total earnings from passenger traffic. At the average yield of 10.7 per cent from the tax (which was merged with fares) the quantum of grant would amount to Rs. 55.58 crores in 1976-77 according to a calculation made by the Maharashtra Government.

The Sixth Finance Commission estimated that the tax would have amounted to Rs. 31 crores in 1971-72, Rs. 33 crores in 1972-73 (RE) and Rs. 36.5 crores in 1973-74 (BE). Noting that "the grievance of the State Governments is real and needs to be redressed early", the Sixth Finance Commission observed, "we also feel that the repeal of the passenger tax and its replacement by a fixed grant was not quite in accordance with the spirit, if not the letter, of the provisions of Article 269 of the Constitution...We would, therefore, urge that the Government of India should redetermine the amount of grants payable in lieu of tax on passenger fares in terms of what the States could have got if the railway passenger fare tax continued in its original form". (Page 24 of the *Report of the Sixth Finance Commission, 1973*). In making its recommendation the Sixth Commission has assumed a fixed grant of Rs. 16.25 crores which is less than half of what was due to the States on the basis of collections in 1972-73. But the loss to the States is even greater as in 1976-77 the collections would be Rs. 55.58 crores. In deciding on the proportion of grants to different States the Commission has gone by the sensible proposition that States which have no railways (Manipur and Meghalaya being the only such States) can have no claim on this grant (Page 22 of the *Report*) and that the most equitable basis for distribution of the grant would be the allocation according to the route length lying within each State (excluding the suburban traffic). Although a railway line became operative in Jammu from October 1972 the Commission did not take this extended railway line into account because no information on passenger earnings in that section of the railways was available (Page 23 *Ibid*). However, the Commission recommended the State's share on the basis of the older lines of railways and has made good the possible loss to the State on account of non-inclusion of the extended line in Jummu by a grant under Article 275(1) of the Constitution. The share of the different States in the Rs. 16.25 crores grant in lieu of railway passenger fares tax is: Andhra Pradesh 8.01 per cent, Assam 2.70 per cent, Bihar 10.58 per cent, Gujarat 7.47 per cent, Haryana 2,57 per cent, Himachal Pradesh 0.17 per cent, Jummu and Kashmir 0.02 per cent, Karnataka 3.47 per cent, Kerala 1.61 per cent, Madhya Pradesh 9.89 per cent, Maharashtra 8.87 per cent, Manipur and Meghalaya (nil), Nagaland 0.01 per cent, Orissa 2.24 per cent, Punjab 5.06 por cent, Rajasthan 6.59 per cent, Tamil Nadu 5.14 per cent, Tripura 0.02 per cent, Uttar Pradesh 19.85 per cent and West Bengal 5.73 per cent. (Page 23 of the *Report of the Finance Commission, 1973*). (See p 17 of Explanatory Memorandum : General Budget 1974-75 for actuals paid to States).

Grants-in-aid under Article 275 of Constitutions

One of the most important tasks of the Finance Commission is to recommend the payment of grants-in-aid to the different States from the Consolidated Fund of India. The Fifth Finance Commission did not recommend any grant under article 275 of the Constitution to Bihar, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Punjab and Uttar Pradesh on the ground that they would be having surpluses in their budgets during the five year period (1969-74) covered by the Commission's recommendations. According to the Commission, these States would yield a surplus of Rs. 1270.80 crores (Bihar Rs. 199.46 crores, Gujarat Rs. 158.90 crores, Haryana Rs. 79.88 crores, Madhya Pradesh Rs. 15.09 crores, Maharashtra Rs. 419.29 crores, Punjab Rs. 117.22 crores and Uttar Pradesh Rs. 280·87 crores). The Commission recommended the grant of Rs. 637·85 crores to the other ten States in the following orders: Andhra Pradesh Rs. 65.01 crores, Assam Rs. 101.97 crores, Jammu and Kashmir Rs. 73.68 crores, Kerala Rs. 49.65 crores, Mysore Rs. 17.99 crores, Nagaland Rs. 77.95 crores, Orissa Rs. 104.67 crores, Rajasthan Rs. 51.49 crores, Tamil Nadu Rs. 22.82 crores and West Bengal Rs. 72.62 crores.

Article 275 does not lay down any specific criteria for determining eligibility of the States for grants-in-aid. The general principle followed by most of the previous Finance Commissions has been to cover by such grants the non-plan revenue deficits of the States even after taking into account the devolution of taxes under other Articles of the Constitution (e.g. income-tax, excise duty, etc. etc.). Because the Fifth Finance Commission went by this principles of budgetary adequacy it did not recommend grants to such poor States like Bihar, Madhya Pradesh and Uttar Pradesh whose per capita revenue was below that of the all-India average in 1964-65.

The Sixth Finance Commission has corrected this injustice and has allotted Rs. 106.28 crores for Bihar, Rs. 160.96 crores for Himachal Pradesh, Rs. 230.53 crores for Rajasthan and Rs. 198.83 crores for Uttar Pradesh, among others. The Commission has calculated that after the devolution of revenues the following States will have a net revenue surplus : Gujarat Rs. 335.46 crores, Haryana Rs. 223.35 crores, Karnataka Rs. 232.74 crores, Madhya Pradesh Rs. 110.18 crores, Maharashtra Rs. 748.42 crores, Punjab Rs. 341.48 crores, and Tamil Nadu Rs. 184.53 crores. In determining the share of the different States in the grants under Article 275 (1) of the Constitution the Commission has taken the revenue position of the States into consideration.

To avoid the pitfalls which had led to the neglect of the interest of the economically backward States, the Sixth Finance Commission was asked to recommend grants-in-aid taking into consideration (i) the existing practice in regard to determination and distribution of Central assistance for financing State plans, (ii) the revenue resources of those States for the coming five years ending in March 1979 on the basis of levels of taxation likely to be reached at the end of 1973-74 ; (iii) the requirements on revenue account ; (iv) adequate maintenance and upkeep of capital assets ; (v) the requirements of States which are backward in standards of general administration for upgrading the administration with a view to bringing it to the levels obtaining in the more advanced States over a period of ten years and (vi) the scope for better fiscal management and economy.

These terms of reference were open to question on two counts. First was the point that there was hardly any one existing practice in regard to the determination and distribution of Central assistance for financing State plans. The Government of India had earlier rejected the suggestion of the Third Finance Commission that part of the revenue component of the State plans for the period 1962-66 should be covered by grants under Article 275. In support of this rejection it was stated that this fell within the domain of the Planning Commission which will allocate appropriate Central assistance for State plans under Article 282 of the Constitution. The other questionable reference of the Government of India to the Sixth Finance Commission pertained to the examination of administrative needs. Unless definite standards of general administration were identified with reference to certain pre-determined norms, how could the Finance Commission possibly come to any conclusion whether the level of administration in a States was low or high ? From what was happening in some States, one might pardonably conclude that the only norm for determining the excellence of administration was the number of commissioners, district magistrates and police superintendents in a State. In Bihar in one year the number of districts was increased from 17 to 31 or by over 72 per cent, and the number of divisions was raised from 3 to 5. How justified was this decision to boost up administrative expenditure in Bihar ? It was seen that in seven years from 1961-62 to 1968-69 revenue expenditure on general administration went up from Rs. 4.06 crores to Rs. 5.78 crores, while expenditure on police more than doubled from Rs. 6.06 crores to Rs. 12.26 crores. There was no doubt that the multiplication of districts and divisions would boost up expenditure on general administration and police still further. A similar trend in the rise of expenditure under these heads was noticeable in the other States as well. The Sixth Finance Commission itself has noted that the West Bengal Government has included future expenses on the deployment of the Central Reserve Police for maintenance of Law and Order in its projections of administrative expenditure in tho coming years. The Commission rightly rejected this demand noting, "we consider it difficult to concede in principle that the deployment of Central Reserve Police would be needed as a permanent measure in any State". (Page 72 of the *Report of the Finance Commission*, 1973). This growth in non-developmental expenditure cannot but affect adversely expenditure on developmental projects. The fact that in a situation where resources were tight the Finance Commission had been asked to suggest increases in non-developmental expenditure of the States was an indication of the great extent to which the bureaucratic ascendancy over the Government of the country had reached. That the Sixth Finance Commission itself was carried away by this bureaucratic trend was to be seen in the fact that it accepted a proposal of the Uttar Pradesh Government to increase non-developmental expenditure to the extent of of Rs. 98 crores (Rs. 54.30 crores police, Rs. 36.03 crores for general administration, Rs. 5.04 crores for administration of justice and *Rs. 2.65 crores for jails) compared with a paltry sum of Rs. 12.80* crores for the welfare of scheduled castes and backward classes and Rs. 55.12 crores for medical and public health. So was the case with Bihar which gets Rs. 81.39 crores for non-developmental expenditure (Rs. 39.60 crores for police, Rs. 36.21 crores for general administration and Rs. 5.58 crores for administration of justice) compared with a paltry sum of Rs. 35.19 crores for primary education (in a State with an eighty per cent illiteracy rate) and Rs. 35.19 crores for medical and public health (in a State with the lowest per capita income but with the highest aggregate expenditure on the purchase of drugs because of the ill health of the people) and Rs. 15.02 crores on the welfare of schedule castes and tribes (of which the State has a sizeable population). These estimates, it is to be noted, were for *additional* expenditure over the next five years. It is indeed strange that the Finance Commission should have been a party to such administrative proliferation even though it considered, to quote the Commission's own words, "primary education, medical and public health and welfare of scheduled castes and scheduled tribes and other backward classes to be of critical importance for the well-being of the people...." (Page 68 of the *Report of the Finance Commission*, 1973). Yet the Commission provided only much smaller amounts under these heads than under police and general administration. Of course, such contradiction between profession and practice is not the characteristic of the Finance Commission alone ! The Finance Commission would have rendered a great service to the people if it had instead alloted most of the additional money to the States for the spread of education, medical facilities and the welfare of the weaker sections of the population. But then this is not what the bureaucracy, bent upon its own proliferation, wants.

Wider Terms for Sixth Finance Commission

Article 280 of the Constitution of India enjoins upon the President of India to appoint a Finance Commission of five members within two years of the commencement of the Constitution. Afterwards at the end of every five years, or at such earlier time as the President considered necessary, a Finance Commission was to be appointed. The fact that within twentyfive years six Finance Commissions have been appointed and completed their work shows that the President has appointed a Finance Commission oftener than he needed to. The duty of the Commission is to recommend as to the distribution between the Central Government and the State Governments of the net proceeds of taxes and the principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India. The President can also refer to the Commission any other matter for the Commission's recommendation "in the interests of sound finance."

The sixth Finance Commission was appointed on 28 June 1972 with the former Chief Minister of Andhra Pradesh, Mr. Brahmananda Reddy, as Chairman. Of the four other members of the Commission, one was a high court judge, one an academician, one a member of the Planning Commission and the other an official of the Government of India who also acted as Member-Secretary of the Commission. The Commission which was asked to submit its report by 31 October 1973, did so on 28 October 1973.

The sixth Finance Commission had wider terms of reference than any of the previous Five Commissions. For the first time the Commission was asked to assess the non-plan capital gap of the States on a unform and comparable basis for the five years 1974-75 to 1978-79. In the ligh of the assessment the Commissien was expected to view the debt position of the States and suggest measures of relief.

The other matter, which was referred to the Commission for the first time, was a review of the policy and arrangements in regard to financing of relief expenditure by States affected by natural calamities. The Commission was requested to examine the feasibility of establishing a national fund to which the Central and State Governments could contribute a percentage of their revenue receipts.

Debt Position of State Government

At the end of March 1972 the total debt of all the State Government combined together amounted to Rs. 9,568 crores which rose to Rs. 10,794 crores by March 1973 (according to the revised estimates) and was expected to go up still higher to Rs. 11,673 crores by March 1974 (according to the budget estimates). The ratio of State debt liabilities to national income (at current prices) rose from 20.6 per cent in 1960-61 to 27.3 per cent in 1972-73. Outstanding loans from Central Government in March 1973 was 74.2 per cent of the total State debt. The break-up of the debt in March 1973 was as follows : (a) Permanent debt representing current and expired loans floated in the market and bonds issued in connection with abolition of zamindari, *jagirdari etc. Rs. 1,462 crores ; (b) floating debt representing ways* and means advances and overdrafts from the Reserve Bank of India and cash credits from the State Bank of India and other commercial banks Rs. 296 crores ; (c) loans from the Centre Rs. 8,010 crores ; (d) other debt Rs. 302 crores ; and (e) unfounded debt including State Provident Funds, postal insurance and life annuity funds, staff benefit funds, etc. and special loans Rs. 724 crores. The six Hindi-speaking states accounted Rs. 3,915 crores or 36.25 per cent of the total debt of the State Governments in March 1973. Their loans from the Central Government totalling Rs. 3,009 crores constituted over 37 per cent of the loans given by the Central Government to the States. The share of the Hindi-speaking States in this total debt as on March 31, 1973 was as follows : Bihar Rs, 967 crores, Haryana Rs. 278 crores, Himachal Pradesh Rs. 133 crores, Madhya Pradesh Rs. 600 crores. Rajasthan Rs. 822 crores and Uttar Pradesh Rs. 1,113 crores. At the end of the Fourth Five Year Plan i.e. at the end of March 1974 the debts of the Hindi-speaking States were also due to up along with those of the other States. According to the budget estimates of the State Governments concerned for the year 1973-74 the debt position of the Hindi-speaking States would be as follows at the end of Fourth Five Year Plan (31 March 1974) :

(In crores of Rs.)

Name of State	Permanent debt	Floating debt	Loans from the centre	Other debt	Unfunded debt	Total debt
Bihar	87(75)	53(53)	796(748)	14(12)	81(79)	1031 (967)
Haryana	38(31)	8(8)	216(215)	12(10)	19(14)	293 (278)
Himachal Pradesh	4(1)	—(—)	132(118)	1(1)	16(13)	153 (133)
Madhya Pradesh	75(70)	—(—)	433(422)	31(26)	98(82)	637 (600)
Rajasthan	89(76)	2(2)	750(696)	18(16)	36(32)	895 (822)
Uttar Pradesh	214(188)	8(8)	838(810)	28(25)	101(82)	1189 (1113)
Total for all the States	1664 (1462)	304 (196)	8536 (8010)	342 (302)	827 (724)	11673 (10794)

Note : Figures in bracket represent the situation as at the end of March 1973.

Source : RBI : Report on Currency and Finance 1972-73 Pp. 118-119.

(Continued)

Central Budget

[*Excerpts from the Speech of Minister of Finance delivered on 28th February, 1975, in Lok Sabha*].

We *do* look upon the budget as an important tool for reaching our cherished socio-economic goals. Development, the security of our country and growth along with social justice continue to govern our priorities ; these objectives determine our decisions on *how much* to spend ; *on what* programmes to spend, and *in what manner* the resources are to be raised. The pattern of our outlays, as well as the relative weight of particular instruments in the raising of resources might vary—indeed, may well *need* to be deliberately fashioned afresh—from time to time, in response to changing circumstances and requirements.

Our ability to meet the minimum basic needs of our people depends crucially on the trend in agricultural production. It is in this light that I regard the claims of agricultural growth as *the first charge* on our developmental resources. Modern agriculture is interlinked with industry. Fertilisers, pesticides, agricultural implements and equipment, besides supply of power, determine agricultural productivity, as much as seeds and water. The sectors of our industry which supply these vital inputs to our agriculture, therefore, merit the highest priority. The continued sluggishness of Indian agriculture since 1971-72 has contributed significantly to the distortions which have emerged in our economy in the last two or three years. The causes for this sluggishness have been carefully analysed. We have identified a series of measures directed towards imparting a new momentum to this vital sector.

The *first* priority is, of course, the supply of good quality seeds of the high-yielding varieties. *Secondly*, fertiliser production programmes are being pushed through, notwithstanding the escalation in project costs of the new units. *Thirdly*, programmes designed to ensure optimum utilisation of surface and ground water to aid agricultural production will be pushed through. Command area programmes under major irrigation projects will be supported by sufficient inputs of men and materials so that the new potential is taken *advantage of by farmers with the least delay and for maximum* social benefit. Inter-State *river disputes,* which unfortunately have been dragging on without solution for a number of reasons in the past, are now being looked into with a special sense of urgency. *Fourthly,* special efforts are being made to organise Farmers' Service Societies to provide credit to the farmers in time, to arrange for inputs and to help in processing and marketing of the produce.

Next only in importance to the agricultural sector is *the energy sector.* The nationalisation of coal is beginning to yield results. During the current year the production of coal is expected to go up by about 10 million tonnes to a record level of 88 million tonnes. The immediate impact of the steep increase in the prices of crude oil, and the petroleum products, was, no doubt, to strain the country's balance of payments severely. At the same time, this has given a new sense of urgency and momentum to our efforts to increase production of indigenous crude. The anticipated increase within as brief a period as one year, between 1974-75 and 1975-76, is from 7.5 million tonnes to 8.4 million tonnes, an increase of about 12 per cent. What is more important is the progress achieved and the potential that is opening up for a major break-through in the indigenous production within the next 5 to 10 years. The discovery of oil deposits in the structures known as Bombay High is already known. The Oil and Natural Gas Commission is expected to establish the first stage of production from Bombay High in the second half of 1976 with a yield of about one million tonnes per year. By 1980 production from this source might well reach the level of 10 million tonnes, though one may have to wait a little before making firm estimates. The Bengal and Kutch off-shore basins are also being intensively surveyed and the preliminary results so far obtained appear encouraging. The dynamism exhibited by the Oil and Natural Gas Commission merits our appreciation.

After a period of stagnation and shortage with widespread consequences to both industry and agriculture, recent trends in the production and distribution of electricity also show a welcome improvement. The entire electricity industry is being restructured with accent on professionalism, efficiency, competence and precisely defined responsibility for the staff. As a result of these measures, there has been distinct improvement in the levels of power generation in the eastern region.

Revised Estimates 1974-75

The original budget for the current year envisaged a deficit of Rs. 126 crores. It has not been possible to adhere to this figure because many of the assumptions on which the original budget was framed have been affected by adverse trends in the economy, most particularly the phenomenal price rise this year.

The provision in the budget for food subsidy was Rs. 100 crores. In view of the difficult food situation and the need to maintain public distribution system at the level of 11 million tonnes, in 1974, we had to arrange for the import of as much as 5.5 million tonnes of foodgrains. Food subsidy during the year is now expected to amount to Rs. 295 crores.

The provisions for salaries of Central Government employees included in the budget for 1974-75 were based on the price level reached up to December 1973, and a lump sum provision of Rs. 120 crores was made to meet the cost of additional dearness allowance. On the basis of the price increase up to April 1974, three instalments of dearness allowance were sanctioned. Prices, however, continued to rise till September 1974, and three further instalments of dearness allowance fell due on the basis of the dearness allowance formula accepted by the Government. In view of the likely unsettling effects of further dearness allowance payments on the economy, it was considered necessary to review these arrangements. Subsequently, in consultation with Government employees, it was decided to sanction instalments which fell due on the basis of the average price index up to 272. It was also agreed that arrears on this account up to December 1974, payable in cash, would be deposited in the provident fund accounts for a short period. This has enabled us to restrict the draft on the Budget on account of six instalments of dearness allowance to about Rs. 230 crores in the current year. This is still Rs. 110 crores more than the Budget provision of Rs. 120 crores.

Defence expenditure for the current year will be Rs. 2157 crores as against Rs. 1915 crores in the original Budget. Apart from a liability of about Rs. 95 crores on account of dearness allowance, the increase is mainly due to revision of pay scales, rise in prices of petroleum products and the higher cost of provisions and transport. Another reason for increase in the deficit has been the drought and floods with which many parts of the country have been affected. Other causes for the higher deficit relate to public sector enterprises, fertilizer imports and additional spending on core sector projects. A few of the enterprises did not have an adequate surplus to repay loans taken from Government. It, therefore, became necessary to provide additional assistance of Rs. 126 crores to a number of undertakings mainly because of increasee in wages and dearness allowance and higher cost of fuel which had not been foreseen in the Budget. The Budget for 1974-75 did not envisage any net outgo on fertilizer transactions. The issue price from the pool was raised only from June 1974. Subsequently, in order to meet the urgent demand for fertilizers, an additional quantity of nearly 1 million tonnes had to be imported at considerably higher international prices. The estimate of cash outgo on account of fertilizer transactions is about Rs. 290 crores. Additional allocations of Rs. 190 crores had to be made for Plan schemes in the core sectors like fertilizers, power, coal, petroleum, steel, ports and paper to maintain their schedules, and provide for escalation in costs. Economies anticipated in other sectors could not be realised in full due to steep rise in costs. As a result, the net expenditure on Central Plan will go up by Rs. 74 crores.

Receipts from Customs are expected to yield Rs. 1300 crores against the Budget estimates of Rs. 936 crores—the improvement being mainly on account of larger import of fertilizers, iron and steel, and a large increase in the prices of items like fertilizers, machinery and equipment. Income and Corporation Taxes are now expected to yield Rs. 1460 crores as against the original Budget estimate of Rs. 1370 crores. External receipts on account of loans, show an increase of nearly 43 crores mainly on account of larger receipts against debt relief from the members of the India Consortium, and larger non-project loans from IDA. Grants from external sources in the revised estimates in terms of actual receipts show an increase of about Rs. 60 crores mainly on account of assistance which India has received from EEC and the UN Fund for Emergency Relief for countries most seriously affected by the oil crisis, and additional assistance from some other countries. Even at the risk of rendering the supply position in the domestic market a little difficult, the Government took the hard decision of allowing the export of nearly half a million tonnes of sugar. While improving our balance of payments position, this has also benefited the Budget to the extent of Rs. 125 crores by way of profits. Even with these various improvements, the year may end with a deficit of Rs. 625 crores. However, nearly Rs. 330 crores of this is on account of payments for stocks on hand of imported food and fertilizers, which will soon be recovered. As both these commodities have been purchased abroad, by drawing down our foreign exchange reserves, there is no resultant increase in money supply and the deficit to the extent of Rs. 330 crores is, therefore, non-inflationary in character.

Budged Estimates 1975-76

I have endeavoured to balance two paramount but somewhat conflicting needs in this Budget—the short-term need to keep in check inflationary pressures, and the equally important requirement to sustain the tempo of development, which, in the ultimate analysis, is the real solution to the problem of inflation.

The projections of receipts for next year at the existing rates of taxation take into account the satisfactory trends witnessed in the current year. Income and Corporation Taxes are expected to yield Rs. 1570 crores and Union Excise duties Rs. 3500 crores. Receipts from Interest tax are expected to be Rs. 60 crores. Customs receipts will, however, be less by Rs. 50 crores next year because of lower imports of steel, and the bunching of fertiliser imports towards the end of the current year. The Budget also assumes a credit of Rs. 125 crores towards profits on export of sugar on the assumption that exports next year will at least be of the same order as this year.

Receipts from external loans are estimated at the same level as this year's revised estimates. We hope to secure oil credits which will provide a support of Rs. 230 crores to the Budget during 1975-76. Apart from debt servicing and other obligatory items of expenditure next year, Defence expenditure would be Rs. 2274 crores as against Rs. 2157 crores in the current year. Food subsidy for 1975-76 is estimated at Rs. 295 crores. As the performance of public sector undertakings is expected to improve, non-Plan assistance to these undertakings will be less next year by Rs. 78 crores than the provision in the current year of Rs. 217 crores. The outgo on fertiliser transactions next year is estimated at Rs. 140 crores.

It was felt that the allocation in the Central Budget for the Central, State and Union Territory Plans should be at least Rs. 3612 crores, if our long-term objectives and urgent priorities are to be adequately fulfilled. This budgetary support of Rs. 3612 crores includes Rs. 1054 crores for States and Union Territories plans, including the hill and tribal areas sub-Plans, the requirements of the North-Eastern Council and assistance for power schemes channelled through the Rural Electrification Corporation. It also includes Rs. 100 crores of special advance Plan assistance to certain States which may have gaps in resources on the basis of Central assistance at the current year's level, to ensure adequate investment in important projects in the core sectors of irrigation and power. Budgetary support for the Central Plan will be Rs. 2558 crores. The total Central Plan outlay next year inclusive of extra budgetary resources will be Rs. 3154 crores. Thus, the total Plan size for 1975-76 will be Rs. 5960 crores which in financial terms represents an increase of 23 per cent over the 1974-75 Plan of Rs. 4844 crores. Budgetary provision for the Central Plan of Rs. 2558 crores represent a step up of Rs. 429 crores over the revised estimate of Rs. 2129 crores in the current year. As agriculture is the backbone of the economy, special care has been taken to step up the investment in this sector substantially—from Rs. 193 crores in the Revised Estimates to Rs. 270 crores. There will be an increase of Rs. 84 crores in investment in fertiliser production over the current year's level of Rs. 192 crores. The Budget support for the power sector including support for Rural Electrification Corporation will be Rs. 140 crores in the next year. Budget provision for coal represents a substantial increase from Rs. 141 crores in this year's Revised Budget to Rs. 229 crores. Budget provision for petroleum and petro-chemicals has also been greatly stepped up to Rs. 170 crores in 1975-76 as against Rs. 60 crores in 1974-75 Revised Estimates. The provisions in the steel sector, particularly for Bokaro and Bhilai expansion, have been fixed taking into account the likely demand for steel. Next year's Plan makes adequate provision for continuing projects for cement production and also for 3 new projects. The Paper Mill in Nagaland is being given high priority. Modernisation of textile mills taken over by the National Textile Corporation has also received special attention. In the Transport and Communication sector, all continuing major ports, shipping, ship-building and aviation projects have been adequately catered for. Social services have not been neglected. Increased provision over the revised estimates for this year has been allowed for village and small scale industries, education, health, family planning, housing and urban development, and welfare of backward classes.

Two schemes, one for compulsory deposit of increases in wages, and 50 per cent of the additional dearness allowance, and another for compulsory deposit of a percentage of the income of income-tax payers, were introduced in July last. It has been decided to take credit for a borrowing of about Rs. 100 crores from the Reserve Bank against the likely addition to blocked deposits which takes place in 1975-76.

Taking credit for this amount, the budgetary support of Rs. 3612 crores for the 1975-76 Plan will entail a resource gap of Rs. 464 crores.

TAX PROPOSALS

Direct Taxes

At present, the basic rate of income-tax in the case of closely-held industrial companies stands at 55 per cent on the first Rs. 2 lakhs of taxable income, and 60 per cent on the balance. On the analogy of the rate structure applicable to the widely-held companies, I propose to modify this provision so as to apply the higher rate of 60 per cent on the entire income of such closely-held companies in cases where the taxable income exceeds Rs. 2 lakhs, subject, however, to the usual marginal relief. This measure will yield Rs. 4 crores in a full year and Rs. 3 crores in 1975-76. There will be no change in the rate of income-tax in the case of other categories of companies.

The levy of a tax under the Interest-tax Act, 1947 on interest received by scheduled banks has had the effect of increasing, on an average, the cost of borrowings from scheduled banks by about one per cent. The levy of this tax has, therefore, made the acceptance of deposits by non-banking non-financial companies from the public all the more attractive, specially in the context of the selective credit control measures adopted by the Reserve Bank. Some corrective by way of a dis-incentive to borrowings from the public by these companies seems to be indicated so that credit planning according to the priorities laid down by the Government is not defeated. I propose, therefore, that in computing the taxable income of non-banking non-financial companies, only 85 per cent of the interest paid by them on public deposits will be allowed as expenditure for tax purposes. This will yield Rs. 10 crores in a full year and Rs. 7.5 crores in 1975-76. In order to channelise corporate savings into high priority industries, I propose to exempt from income-tax, inter-corporate dividends derived by domestic companies from new companies engaged in the manufacture of fertilisers, pesticides, paper and cement. Having regard to the importance of pesticides to our economy for increasing agricultural production, I propose to extent the benefit of initial depreciation allowance to the pesticides industry also. I propose also to exempt from wealth-tax for a period of five years investment in equity shares of new companies engaged in priority industries listed in the Ninth Schedule to I. T. Act.

Our development efforts can be sustained only through promotion of savings. I have, therefore, decided to liberalise the concession currently available under the Income-Tax Act in respect of long-term savings through provident funds, life insurance, etc. so as to allow a deduction in respect of 100 per cent of the first Rs. 4,000 of the qualifying savings plus 50 per cent of the next Rs. 6,000 of such savings plus 40 per cent of the balance. This measure will result in a revenue loss of Rs. 8 crores in full year and Rs. 6 crores in 1975-76. Frequent withdrawals are made from Government Provident Funds. I have, therefore, decided to introduce an incentive bonus scheme to benefit those Government employees who do not withdraw any amount from their provident fund accounts during the year. The bonus will be allowed on the subscriptions made during that year and will be calculated at the rate of 3 per cent for employees drawing pay up to Rs. 500 per month and 1 per cent for employees drawing pay above Rs. 500 per month.

In order to give some relief to middle class families who have to bear the burden of providing higher education to their children, I propose to allow a deduction in respect of expenses incurred by individuals in this regard. In respect of children attending degree or post-graduate courses in medicine, engineering or other technical subjects, the amount of deduction will be Rs. 1,000 per child and in respect of children attending degree or post-graduate courses in other subjects or diploma courses in medicine, engineering or other technical subject, the amount of deduction will be Rs. 500 per child. The new concession will be available in the case of individuals whose gross total income does not exceed Rs. 12,000 per annum and restricted to two children in any case. This will result in a reduction of revenue of Rs. 7 crores in a full year and a little over Rs. 4 crores in 1975-76.

At present, income from live-stock breeding in poultry and dairy farming is exempt from income-tax. This exemption is prone to abuse by showing income which would otherwise be chargeable to tax as exempt income. I accordingly propose to restrict the exemption to Rs. 10,000 in a year. This will mean an additional revenue of Rs. 2 crores in a full year and Rs. 1.2 crores in the financial year 1975-76.

I propose to exempt from income tax retrenchment compensation paid to workmen under the Industrial Disputes Act or other similar laws up to a maximum of Rs. 20,000. With a view to curtailing ostentatious expenditure in business and professions, I propose to deny depreciation in respect of imported cars which are acquired after 28th February, 1975. Simultaneously, I propose to allow full depreciation for indigenous cars, irrespective of their cost.

Under Corporation Tax, the full year effect of the proposals is Rs. 14.0 crores and the yield for 1975-76 will be Rs. 10.5 crores. As a result of the concessions given, there will be a net reduction of Rs. 13.0 crores under Income-tax in a full year and Rs. 9.0 crores in 1975-76. The impact of this reduction in 1975-76 on the Central revenues will be Rs. 2.26 crores.

INDIRECT TAXES

Excise Duties

The recent spurt in the price of sugar in the international market provides us an excellent opportunity to increase our exports of this commodity, even at some sacrifice. With a view to reducing consumption of sugar for less essential uses and releasing more quantities for export, I propose that the Basic excise duty on free sale sugar may be stepped up from 30 per cent *ad valorem* to 37½ per cent *ad valorem.* I do not propose to make any change in the present effective rate of duty on levy sugar, which now accounts for 65 per cent of the total internal releases, so that the average citizen is assured of his quota of sugar at a reasonable price. The proposed increase in duty on free sale sugar will yield an additional revenue of Rs. 30.25 crores.

Khandsari sugar is at present chargeable to a duty of 17.5 per cent *ad valorem.* I propose to withdraw the compounded levy scheme. All the Khandsari units will, hereafter, work under the normal Central Excise procedure and pay duty at 17.5 per cent *ad valorem.* From this proposal I expect to raise an additional revenue of Rs. 19.60 crores.

The duty on tea produced in the various Zones has remained unchanged for the last five years. Tea prices both in the Indian and London auctions have substantially risen during this period. I therefore, propose to increase the existing basic duty on loose tea produced in Zones I, II, IV and V by 10 to 15 paise per kg. Tea of Zone III at present bears the highest rate of duty and there is need for giving some relief because of the low yield and the high cost of cultivation. As more than 90 per cent of the tea produced in this Zone is exported and since the price increases in respect of these teas have been the least, I propose to reduce the present basic duty for this Zone by 10 paise per kg. Apart from bringing in revenue, the proposed increase in duty on teas of Zones I, II, IV and V will help in making more tea available for export. With a view to ensuring that the increase in excise duty on tea does not hit exports, I also propose to raise the ceiling limit on the quantum of rebate admissible for exported teas under the present scheme from the existing level of 75 paise per kilogram to 85 paise per kilogram. The net effect of the proposed changes will be an additional revenue of Rs. 3.40 crores.

For similar reasons, I propose to step up the basic duty on cement from 30 per cent *ad volorem* to 35 per cent *ad valorem*. This proposal will yield an additional revenue of Rs. 15.95 crores. So long as energy shortages persist, there is a case for making petroleum products more expensive so as to promote greater economy and efficiency in their use. Against this background, the duty on motor sprit is proposed to be raised by 10 paise per litre. I also propose to increase the duty on furnace oil to a little less than 3 paise per litre. Low Sulphur Heavy Stock used for electricity generation will, however, continue to be exempt as at present. These levies will together yield an additional revenue of Rs.26.00 crores.

I propose to increase by Rs. 2000 per tonne the excise duty on commercial grade aluminium thereby providing encouragement for greater production of electrical conductor grade aluminium. The proposed increase in duty will yield an additional revenue of Rs.15.00 crores.

Following the T. E. T. Committee's recommendation, I propose to levy a uniform total excise duty of Rs. 3 per kilogram on non-flue-cured manufactured tobacco other than that used for the manufacture of cigarettes. This will mean a reduction of Rs. 1.60 per kg. in the total duty for biri tobacco, and of Re. 0.25 per kg. for hookah, chewing and snuff tobacco. However, in the case of stalks I propose to fix the duty at Rs. 2 per kg. against the present rate of Re. 0 65 per kg. There is already a duty of Rs. 3.60 per thousand on biris manufactured with the aid of machines. I now propose to levy a duty of Re. 1 per thousand on handmade biris also, of which 80 paise will be in the form of Basic duty and 20 paise in the form of Additional excise duty in lieu of sales-tax. For the sake of administrative convenience, this levy will be restricted to biris sold under brand names. The duty on machine made biris will be correspondingly stepped up from Rs. 3.60 to Rs. 4.60 per thousand. I also propose to levy a duty of 10 per cent *ad valorem* on chewing tobacco sold under brand names and on snuff. An exemption to the extent of 5 per cent will, however, be provided in respect of chewing tobacco whose value does not exceed Rs. 10 per kg. I propose to raise the effective duty on cigarettes also This duty will be increased by 5 per cent *ad valorem* at all price levels except that the ceiling level of Basic duty will continue to remain at 250 per cent *ad valorem*. Similarly, I also propose to raise the Basic effective duty on smoking mixtures by 5 per cent *ad valorem*. On account of the rationalisation of duty on manufactured tobacco there will be a reduction of Rs. 8.25 crores. But the net additional revenue from tobacco and tobacco products will be Rs. 26.88 crores. I propose to shift partially the burden of excise duty on artsilk fabrics from the fabric stage to the yarn stage, since collection of revenue at the yarn stage is administratively easier and provides fewer loopholes. The additional excise duty levied on artsilk fabrics in lieu of sales-tax, and the handloom cess, will continue to be levied at the fabrics stage ; but there will be no basic excise duty on artsilk fabrics except in the case of those fabrics whose value exceeds Rs. 15 per sq. metre. This will result in a loss of revenue of Rs. 22 crores ; to neutralise this loss, and to earn additional revenue, I propose to increase the duty on rayon and synthetic yarns suitably. I also propose to levy a new duty leviable on base yarn used in their manufacture, and to withdraw the existing concessions on knitted fabrics.

I propose to raise the existing duties on superfine and fine cotton yarns which are used by the composite mills, by powerlooms, and in the hosiery and sewing thread sectors of the cotton textile industry. As a sequel to increase in the rates of duty on cotton yarn I also propose to raise suitably the rates of compounded levy paid by composite mills on cotton yarn and mixed yarn used by them. In order that the increases in yarn duty may not hit the handlooms, the duty on yarn cleared from the mills in the form of straight reel hanks used mostly by the handloom sector is being kept unchanged I propose to increase the compounded levy on powerlooms to Rs. 200 per loom per annum on all those units with less than 50 powerlooms each. A two-tier duty structure is proposed to be introduced for cotton fents and rags, the lower level applying to fents and rags cleared up to a prescribed limit, and the higher level, to clearances above that limit. The various proposals on textiles will yield an additional revenue of Rs. 49.10 crores.

Although air conditioners already carry a duty of 75 per cent *ad valorem*, I propose to raise this level to 100 per cent *ad valorem*. I similarly propose to raise the duty on parts of refrigerating and air conditioning plants and machinery from 100 per cent *ad valorem* to 125 per cent *ad valorem*. Duty on refrigerators, and refrigerating machinery and appliances, as well as Aircoolers, is however being kept unchanged. Parts of refrigerating machinery for cold storage plants, hospitals and factories also will continue to pay the present concessional duty. I further propose to raise the Basic duty on Cosmetics and Toilet preparations from the present rate of 30 per cent *ad valorem* to 40 per cent *ad valorem*. Since this item also carries an Auxiliary duty of 50 per cent of the effective Basic duty there will be a total increase of 15 per cent *ad valorem* in the duty. Shampoos will also henceforth pay a Basic duty of 40 per cent. My next proposal is to raise the duty on safes, strong boxes and similar articles from 10 per cent *ad valorem* to 20 per cent *ad valorem*. The combined revenue effect of my proposals for increase in duty on air conditioners and parts, cosmetic and toilet requisites and safes, strong boxes and the like will be Rs. 7.65 crores.

As a revenue measure, I propose to increase by 5 per cent the effective duties on synthetic organic derivatives, chinaware and porcelainware, and glass and glassware except laboratory glassware. I also propose to make some changes in the existing basis for grant of concession to small scale manufacturers of chinaware, but these changes will be made effective only from 1st April, 1975. My proposals regarding synthetic organic dye-stuffs, glass and glassware and chinawar and procelainware will yield an additional revenue of Rs. 10.20 crores. I propose to increase the duty on packing and wrapping paper, pulp boards and duplex and triplex boards from 80 paise per kilogram to Rs. 1.20 per kilogram. This will yield an additional revenue of of Rs. 9.80 crores. I propose to increase the present effective duty on electric wires and cables, excluding those used for telecommunication and high voltage transmission lines, by varying rates ranging between 2½ and 5 per cent *ad valorem*. I also propose to raise the duty on electric fans marginally, but there will be no increase in the duty on industrial fans. The proposed increases in the duty on electric wires and cables and fans will yield an additional revenue of Rs. 4.30 crores. Rationalisation of the tariff entries and exemption notifications relating to gramophones, record players, tape-recorders, permanent magnets, vehicular tyres, components of motor vehicles, wool tops, concessions for the use of rice bran oil and minor oils in the manufacture of soap, and of cotton-seed oil in the manufacture of vegetable products has been proposed. I also propose to rationalise the tariff for exposed cinematograph films, and to increase the differential between coloured films on the one hand and black and white films on the other. All these measures will yield an additional revenue of Rs. 6.84 crores. As there is a substantial difference between the imported cost of graphite electrodes and anodes and the indigenous cost of production, I propose to levy an excise duty of 15% *ad valorem* on graphite electrodes and anodes. This will yield a revenue of Rs. 1.50 crores.

I now come to a new concept in Central Excise taxation. Hitherto the Central Excise tariff covered only certain specified goods. With a view to widen the coverage of taxable goods and to provide a more dependable information base for future revenue raising exercises, I propose to introduce a new item in the Central Excise Tariff Schedule, which with a few exceptions, will cover all goods produced for sale or other commercial purpose not elsewhere specified in the Schedule. Goods covered under this new item will be chargeable to a nominal duty at the rate of 1 per cent *ad valorem.* While the tariff item will cover the production of all factories as defined in the Factories Act, 1948, I propose for the sake of administrative convenience to exempt the production of those factories which employ not more than 49 workers in the case of power-operated factories, and not more than 99 workers in the case of non-power operated factories. To further simplify the levy, I also propose to exempt from duty intermediate products and component parts falling within this item produced in a factory and consumed within the same factory for the manufacture of finished goods. No countervailing duty will be levied on imported goods corresponding to this new item. This levy is admittedly an experimental measure. I expect this measure will yield a revenue of Rs. 24.00 crores per annum.

The auxiliary duty of excise levied under the Finance Act of 1974 valid up to 31st March, 1975 is being continued up to 30th of June, 1976. Mainly on account of the increase in the basic duty proposed on some items there will be additional accrual of auxiliary duty also, estimated at Rs. 5.34 crores. This amount, however, has been included in the Revenue Estimates under the respective items already mentioned.

The total effect of all the above proposals relating to Central Excise will be an additional revenue of Rs. 250.47 crores. Of this the

Union Government's share will be Rs. 194.81 crores and the States' share Rs. 55.66 crores.

Import Duties

I do not propose any revision of Customs Tariff rates. But considering the trend of international prices of non-ferrous metals I propose to increase the countervailing duty on copper by Rs. 3500 per tonne and on zinc by Rs. 2125 per tonne. These changes will yield an additional revenue of Rs. 24.50 crores. The increase in Central Excise duty on certain items which I have proposed earlier will lead to a consquential increase of Rs. 9.55 crores in the collection of countervailing duty on imports. The auxiliary duties of Customs levied under the Finance Act of 1974 is being continued up to 30th of June, 1976 and the effective rates of this levy remain unchanged.

The various proposals which I have made will yield an increase of Rs. 34.05 crores in Customs revenue. The yield for 1975-76 for the Centre, taking Union Excise Duties and Customs Duties together, will be Rs. 228.86 crores.

Central Sales Tax

The rate of Central Sales-tax on inter-State sales of goods is being raised from 3 per cent to 4 per cent with a corresponding change in the ceiling prescribed in respect of local Sales-tax on goods declared to be of special importance in inter-State trade or commerce. As a result of this proposal being made effective from 1st July, 1975, the additional collections for those Union Territories whose revenues form part of the Consolidated Fund of India will amount to Rs. 1.75 crores in the year 1975-76. The States will benefit to the extent of Rs. 38.25 crores in 1975-76 through this measure.

To sum up, so far as the Union Budget is concerned, the various proposals imply, for 1975-76, additional revenue aggregating Rs. 239 crores. The budgetary gap of Rs. 464 crores, as indicated earlier, will accordingly be scaled down to Rs. 225 crores.

(Continued from page 136)

the remission limit for dividend payable on Capital works-in-progress should be raised from 25% to 50%. This additional relief has, for the present, been allowed for 1974-75 and 1975-76 and amounts to Rs. 1.40 crores and Rs. 3.91 crores respectively.

In the Bombay area, feasibility studies for Corridor 7 and detailed designing in respect of Corridor 6 are in hand. Similarly, detailed designing for rapid transit corridors in Delhi and Madras which have been identified in consultation with the Planning Commission will be undertaken in 1975-76.

Budget Estimates for 1975-76

Taking these prospects of goods and passenger traffic into account, gross traffic receipts at the existing level of fares and freight rates have been estimated at Rs. 1631.86 crores. Goods earnings have been assessed at Rs. 1045.50 crores, as against the expected earnings of Rs. 899.82 crores in the current year. We have estimated our passenger earnings at Rs. 477.06 crores, up by Rs. 71.21 crores over the Revised Estimates. 'Other Coaching' earnings are also expected to improve in sympathy with passenger earnings and have been raised from Rs. 68.58 crores in 1974-75 to Rs. 76.10 crores, Sundry earnings have been marginally increased from Rs. 38.90 crores in the current year to Rs. 39 20 crores in the next year.

Working Expenses for 1975-76 are estimated to be Rs. 1298.28 crores, which include Rs. 54 crores for accommodating the full-year cost of three dearness allowance instalments recently sanctioned. There is also a provision of Rs. 42.74 crores for additional expenditure on repairs and maintenance of various assets in sheds and shops. The estimates also include nearly Rs. 23 crores to meet the higher fuel bill for larger volume of traffic assumed for the next year.

The appropriation to Depreciation Reserve Fund has been maintained in accordance with the wishes of the Railway Convention Committee, at Rs. 115 crores, but contribution to Pension Fund has been marginally raised by one crore to Rs. 17 crores. Expenditure on Open Line Works Revenue and other miscellaneous items will go up by nearly Rs. 2 crores. The dividend liability, after taking credit for the relief granted by the Railway Convention Committee in its last Interim Report, is calculated to be Rs. 197.88 crores. Counting all these items of anticipated revenue and expenditure, the year is expected to end with a deficit of Rs. 15 97 crores.

Foodgrains and pulses are carried at rates below the bare operating cost. Approximately half the quantity is carried on Government account for public distribution and the balance is consigned by private parties. In the current year, the Railways will suffer a loss of Rs. 34.5 crores in lifting 14.5 million tonnes of these commodities. In 1975-76 this loss is expected to go up to Rs. 35 crores on the movement of 15.5 million tonnes. It is proposed to bring the commodities, generally described as foodgrains, within the framework of standard tariff and place the bulk of them, *i.e.* wheat, rice and jawar in the second lowest classification of goods. The proposal will yield an additional revenue of Rs. 35.5 crores, which will just about neutralise the loss. On an average, incidence of this proposal on prices will be as low as 2.5 paise per kg. I am sure that the good rabi crop will easily absorb this marginal expenditure.

Iron ore and manganese ore for domestic consumption pay a different charge from consignments meant for export. In terms of transport effort on the part of the Railways, there is no valid reason for this differential tariff. I, therefore,, propose to treat them alike and place them in the same common classification. This rationalisation would fetch the Railways an earnings of Rs. 3 5 crores.

These two modifications, which will come into force from 1-4-1975, will yield Rs. 39 crores during 1975-76, With this additional revenue, the deficit of Rs. 15.97 crores will be converted into a surplus of Rs. 23.03 crores, of which Rs. 18 crores will be utilised on defraying expenditure chargeable to Development Fund and the balance of Rs. 5.03 crores will be credited to Revenue Reserve Fund.

Review of the Budgets will appear in the next issue.

EDITOR

ECONOMIC AFFAIRS

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The Fate of Fifth Plan

India's Draft Fifth Plan seems to have been so constructed that it can be redrafted as many times as the planners like without impairing its twin major objectives of "removal of poverty and attainment of self-reliance". But the point is can it be meaningfully redrafted or can only be drawn afresh with new look and objectives ?

In economic precisions the fifth plan has been formulated on certain important assumptions. One, the overall balance of payments gap will be filled up by gross external assistance or net draft on reserves or drawings from the IMF so that by the end of fifth plan it will come down to Rs. 783 crores, sixth plan Rs. 100 crores and of seventh plan there will be no deficit at all. Two, creation of a dent on poverty by increasing the rate of growth which in the first decade of planning 1951-60 was only 3.8 per cent and in the second decade 1961-70 3.7 per cent. The average rate of growth in terms of net domestic product was 3.7 per cent (estimate was 5.7 per cent) for the fourth plan period, and for the fifth plan period it has been estimated at 5.5 per cent. Three, the estimated growth rate will be possible to achieve if there is no "strong inflationary pressure" and if the economy is free from "considerable uncertainties affecting the international situation". Four, restructuring of output in favour of goods and services which involves adequate information about input-output coefficients for different sectors of the economy and knowledge of emerging and contemplated technological changes. Five, simultaneously, restructuring of demand to avoid underutilization of capacity of capital goods sector and strong inflationary pressure on consumer goods sector or what is called "stagflation" that had characterised the greater part of the period of Plan holiday in the mid-sixties. Six, curb on private (affluent sector particularly) consumption to boost up the rate of saving from 12.2 per cent of GNP in 1973-74 to 15.7 per cent in 1978-79, 19 per cent in 1983-84 and 20 per cent in 1985-86 when it will provide the economy with a "solid base for a sustained rate of growth of the order of 6.5 per cent per annum". Seven, sufficiently high agricultural productivity to create "surplus" for the industries. Eight, sufficient investment in the critical sectors requiring "adequate rate of return". Nine, effective public distribution of some essential homogeneous commodities. Ten, earning of higher rates of return from public enterprises through greater efficiency and pricing policies. Eleven, neutralization of excessive increase of money supply to the extent possible by corresponding changes in the level of bank credit extended to the private sector.

Two years have passed but the fifth plan is yet to be redrafted. As is said it is because the assumptions are extremely restive. It is true, but superfluously. The assumptions are misplaced and consequently misemphasized. Had they been properly identified they could have been confronted for containment with contemplated disciplines and the plan could have been implemented against the growing (but not unknown) adverse conditions. The plan is, realistically speaking, for the price, people and politics, by the price, people and politics, and of the price, people and politics. But both internal and external prices are unpredictable, so also the mood of the hungry and socially deprived people and the methods and courses of the "democratic" politics. Tacitly the planners assume the universal logic of nationalism as a matter of social discipline in any form of social system. This assumption is wrongly applied on a man (or country) who has to make a stern choice between acceptance and rejection of social denial. He is an explosive. This explosive plus democracy turns the politics into personal lust for power or ideological conspiracy to deliver the country in the hands of a foreign super power. Prices are always unpredictable, extremely now as the world economy has been torn into pieces by ideological hostility, hegemony, oil deterrent, and groupings and regroupings for opportunistic development. These are factors, real and basic, which the planners have never cared to consider. As a result the country gets plans but no mass enthusiasm to implement them, reaffirms its pledge for both holding high and destroying fast the political democracy, and sees price-politics as a game for diversion of the country's intellectual and political misdeeds. The communist world has solved this social puzzle by adoption of the method of "annihilation and acceleration", which, for our strong sense of values for human life, we cannot. The only way left is then to replace the perspective plans by shortterm indicative plans. Let the economy grow more freely until the time is ripe to jump on it for a takeover to construct "socialism" from above than to build it up from below.

Some Thoughts on Central Budget

Himansu Roy*

In his budget speech the Union Finance Minister has expressed deep concern for the continuous price rise and felt depressed for having no positive ways and means for an "accelerated growth combined with stability". His simultaneous job is to contain the inflation and induce investment in imoportant priority areas. With this end in view he has reminded the House that the Government has already curtailed non-development spendings, sterilized wage increase and fifty per cent of the additional dearness allowance, and restricted distribution of dividends. Besides, it has also drastically cut the money supply and taken severe actions against hoarders and smugglers. As a result of all these he now finds in much pleasure and complacency that the wholesale price index for the week ended April 12, 1975 was lower by 0.60 per cent. And pleasingly he has discovered that the various taxes levied in the budget for 1975-76, unlike previous years, have not disturbed the declining trend of the wholesale prices which has begun since the last week of September 1974. The wholesale price index for the week ended April 12, 1975 was higher by only 6.9 per cent compared to its level a year before. At the end of 1973-74 prices were rising at an annual rate of 30.2 per cent and by September 1974 the annual rate of inflation rose to 31.9 per cent. And between September 21, 1974 and April 12, 1975 the wholesale price index declined by 7.0 per cent and its effects have started getting gradually reflected in retail prices.

The Finance Minister however admits that the operation of the restrictions on distribution of dividends has depressed the capital market, and the Unit Trust of India has faced a situation of repurchases which has been much higher than the sale of units. To moderate this trend the Government has to issue an Ordinance providing for certain tax relief and other remedial measures and he claims that the situation has now improved. The truth seems to be otherwise and elsewhere. The Government has been trapped by its Operation Private

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* Calcutta.

Sector. Its overt policy of rendering financial "assistance" to the private sector through the public sector financial institutions by participating in equity shares was to covertly grapple the control of the private sector enterprises. The private sector had to take this bitter assistance because by the interest policy and imposition of restrictions on dividend distribution the Government had become successful to entice away the investing public to alternative investments. Now the Government has no hesitation to say that there is no private sector as such, it has become a "Government sector". This half-way position of the private sector is the result of the Government's apprehension that its complete takeover may mean the end of the private entrepreneurship and with it the end of the industries in the private sector. Making the capital market grow dry the Government, now the financial and operational controller of the private sector, finds that for national interest it shall have to meet the genuine requirements of additional finance of this sector. This has led to a series of concessions to the private sector through Companies (Acceptance of Deposits) Rules 1975, Foreign Exchange Regulations Act. 1973, amendments of the Companies (Temporary Restrictions on Dividends) Act 1975 and, more importantly, liberal expansion of monopoly capital. This may be a pragmatic approach or, more precisely, re-approach to the socialist approach to economy, but is certainly a negation of the ideology of the party in power.

The Finance Minister's optimism for the accelerated growth is self-defeating. Our growth base is capital-intensive, that is, the market rates of interest (specially in the face of the measures for containing inflation) are an important factor in stimulating investment. Interestingly, some important inputs (oil and fertilizer) are import based and their prices have risen many times giving no certainty that they will not rise further still. This has further narrowed the prospective return on cost. If the industries have to remain content with the existing stock of capital it will mean starting from the back than to work with new technology and equipment to generate additional income to abosorb the net increment in productive capital stock. In any way, more the dependence on existing capital goods less will be the natural rate of growth. A practical point may be posed. Why have there been unused capacities in some industries ? Obviously because of the failure of consumption to give the desired support to the productive capacity. And why ? May be for bad planning or for the appearance of contingencies for which the plans could not provide, or for many other things. But this much can be said that all these knowns and unknowns are still on the surface as well as in the horizon. The task of starting anew is therefore stiff, difficult and regressive. Additionally, there is the point of recession, which although is not accepted by the Government cannot be discounted. For logically recession follows inflation of a high magnitude through the paths of both business pessimism and economic distortions which are caused by the inflation itself. The pressure of price fall has not been felt in recessionary perspective because of the price support given by black money and general scarcity in relation to general demand for consumer goods.

The Finance Minister however asserts that the industrial production is on increase. Preliminary advance estimates suggest that index of industrial production in 1974-75 may record an increase of 4.0 per cent as against 0.5 per cent in 1973-74. During the last quarter of 1974 production of several sensitive industrial products, e g. cement. nitrogenous fertilizers, caustic soda, sugar and vanaspati, registered increases ranging from 10 per cent to 40 per cent as compared with the preceding quarter. He further adds that the available evidence suggests that this trend has been sustained during 1975. And it is "reasonable to hope" that the index of industrial production for 1975-76 will record a further improvement for the plan outlays for 1975-76 has been stepped up by about 23 per cent.

Let us hope so. But these increases are from minus zero. All price rise is not inflationary ; similarly all production increase is not economically significant. There cannot be zero invesment i.e. zero production at any time. The sustaining and accelerating character of production depends on the enduring activity of a large number of elements whose presence is hardly perceptible.

Not that the Finance Minister is quite ignorant of all this. Such is the performance of the public sector that he had to put on record that "a few public sector enterprises have no adequate surplus to repay loans taken from the Government" and they bad to be provided with additional assistance of Rs. 126 crores to meet wages, D. As. and fuel bills. The monopoly has been allowed to expand. For the public sector has failed to expand in a big way, and the public sector units have become "unmanageable and unwieldly".

He feels happy for the information that the crop prospects are well, and the agricultural "surplus" will help feed the industrial workers that will keep the wages low. This is one way of seeing things or of not seeing the problems. The demand for wage rise is linked broadly with the cost of living index and the rate of profits of the enterprise concerned, besides its infectious effects. Much of the "surplus" will go to feed the additional one crore mouths which are added every year and, if sense prevails, also to build up the buffer stock. The "surplus", if any at all, will certainly not be of this desired size. The alternative is to import foodgrains at exhorbitant world prices which involves not only foreign exchange but also food subsidy. The Finance Minister however points to "well functioning public distribution system for certain basic essential commodities". But at once he conditions himself, provided "efficient arrangement for procurement of the needed commodities" can be made. Sometimes he seems to have sunk still further as is evident from his pointing to the takeover of 103 textile mills stating that it is "another very useful instrument to regulate the production and distribution of cloth". The tragedy is that he has skillfully raised a number of economic problems, pursued them, but ultimately left them to take their own course. To be more specific, he says, "full utilization of our growth potential will require sustained hard work and the utmost discipline on the part of all sections of the community" but the sweep of J. P. Movement and the general socio-economic discontentment throughout the length and breadth of the country belie all hopes of getting "sustained hard work and the utmost discipline from the people". Elsewhere, "Higher investment in the key sectors is essential, but it must be financed in a non-inflationary manner. This means we must increase the rate of savings." So far so good. But how when saving is not an independent variable ? His expectation of containment of inflation by the exercise of his budgetary prudence is also extremely exaggerated. The revised version of the budget raises the uncovered deficit by Rs. 33 crores making it Rs. 258 crores. If trend has any meaning it will rise by at least three times more. Having huge accumulated deficits at the back this may save the economy from recession but will lead it to the second stage of inflation after a pause caused by repression.

"Historically periods of economic crises provide the most hospitable climate for the growth of anti-democratic movements."

—Adolf Hitler

Comparative Study of High Yielding and Non-high Yielding Varieties of Paddy in West Bengal—A Case Study

Debabrata Lahiri and **S. B. L. Gupta***

Various studies have so far been conducted in different parts of the country on the "Economies of High Yielding Varieties" in different crops. It has also been proved that cultivation of high yielding varieties is profitable one. The cultivation of high yielding varieties of paddy has also been taken up by the farmers gradually. Thus the present study examines some economies of high yielding varieties of paddy in the Bolpur Block of District Birbhum in West Bengal. A part of the Block, financed by United Bank of India, is known as "Ikshudhara Project". A number of shallow tubewells have been sunk by United Bank of India.

Objectives :

The study has been taken with the following objectives :

(i) To estimate the cost and returns of high yielding and non-high yielding varieties of paddy.

(ii) To compare the resource use and productivity of important input factors in high yielding and non-high yielding varieties of paddy.

Sample Designs

(a) *Selection of Block* : The Bolpur Block was selected for certain investigational facilities.

(b) *Selection of Villages* : In all there are 170 villages in the Block. A list of all the villages in the block was prepared in ascending order of their cultivated areas growing both high yielding and non-high yielding varieties of paddy. Only seven per cent villages in all were selected randomly.

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(c) *Selection of Cultivator*: For the selections of cultivating families a list of all farmers growing both high yielding and non-high yielding varieties was prepared. They were then arranged in ascending order on the basis of their operated areas. They were further classified into four strata of their own land as :—

(i) Cultivators having areas below 1 hectare i.e., marginal farmers

(ii) Cultivators having areas from 1 hectare to 2 hectares i.e., small sized farmers

(iii) Cultivators having areas from 2 hectares to 3 hectares i.e., medium sized farmers and

(iv) cultivators having areas above 3 hectares i.e. large farmers.

From each size group 10 per cent of the farms were randomly selected on the basis of probability proportional to size of farms. Thus, the study in all covers 41 selected farms as given below.

Table 1

Number of small families in different size of farms

Size of farms in hectares	Number of selected farms
Below 1.00	8
1.00-2.00	17
2.00-3.00	10
3.0') and above	6
Total	41

Period of Enquiry: The present enquiry relates to the agricultural year 1971-72.

Distribution of Area under High Yielding and Non-high Yielding Varieties of Paddy

The following table gives the area under high yielding and non-high yielding varieties of paddy by size of farms.

It is observed from the table that the area under high-yielding varieties of paddy is 19.62 per cent and the rest 80.33 per cent is under non-high yielding varieties of paddy. Further, the area under the high-yielding varieties is maximum on small farms being 34.31 per cent of the total area under paddy.

Table 2

Area under High Yielding and Non-high Yielding Varieties

Srl. No.	Size of farms	High Yielding	Non-high Yielding	Total
1.	Below 1.00	1.64	3.14	4.78
		(34.31)	(65.69)	(100.00)
3.	1.00-2.00	3.43	18.71	22.14
		(15.50)	(84.50)	(100.00)
3.	2.00-3.00	3.02	18.64	21.66
		(13.95)	(86.05)	(100.00)
4.	3.00 and above	4.50	21.60	26.10
		(17.25)	(82.75)	(100.00)
	All farms	0.37	1.51	1.88
		(19.62)	(80.38)	(100.00)

*Figures in parentheses show percentages to total of high yielding and non-high yielding varieties.

Sourcewise irrigation : Irrigation is an important determinant for the success of the high yielding varieties. For assured water supply is an incentive for the adoptiou of high-yielding varieties. Among the various sources of irrigation in the sample villages the important are shallow tubewells and canals.

The following table gives the sourcewise distribution of irrigation by size of farms.

Table 3

Sourcewise Irrigation

Srl. No.	Size of farms (hectares)	Shallow tubewells	Canals	Others
1.	Below 1.00	94.01	1.91	4.01
2.	1.00—2.00	87.87	3.71	8.22
3.	2.00—3.00	72.92	15.94	11.16
4.	3.00 and above	99.20	0.80	0
	All farms	81.48	5.60	5.92

The above table shows that shallow tubewells covers 88.48 per cent of the irrigation potential on the sample farms. Other important source of irrigation is canel which covers 5.60 per cent. The area covered by the shallow tubewells is maximum under farms because of their sound financial condition to install the tubewells.

Borrowings : With the introduction of high-yielding strains on the farms the credit need of the cultivators is multiplied and as such a number of agencies institutional and non-institutional in nature have come forward to meet the demand of credit. The distribution of borrowings according to agencies is given in the following table.

Table 4

Sourcewise Distribution of Borrowings by Sample Farms

Srl. No.	Size of farms (hectares)	Total borrowing per family	(Rupees Sources)			
			Co-op.	Bank	Govt.	Private
1.	Below 1.00	172.50	100.00	1200.00	50.00	30.00
		(100.00)	(7.24)	(86.95)	(3.62)	(2.19)
2.	1.00—2.00	295.59	375.00	4500.00	100.90	50.00
		(100.00)	(7.46)	(89.55)	(1.99)	(1.00)
3.	2.00—3.00	521.00	400.00	4550.00	200.00	60.00
		(100.00)	(7.67)	(87.33)	(3.83)	1.17)
4.	3.00 and above	573.00	400.00	2500.00	200.00	40.00
		(100.00)	(11.62)	(72.67)	(5.81)	(9.90)
	All farms	367.17	31.09	208.78	13.41	6.39
		(100.00)	(8.64)	(85.85)	(3.72)	(1.79)

* Figures in parentheses give percentages to total borrowings per family.

On an average a sample family has to borrow Rs. 367.17 to meet his farm and family requirements, borrowings per family increase from Rs. 172.00 in first size group to Rs. 573.00 in the last size group. Of the total borrowing per family the commercial banks account for nearby 86 per cent ranging from 72 per cent on the largest farms to 90 per cent on the small farms. The cooperative and the government account for only 8.64 and 3.72 per cent in total borrowings respectively. It is noteworthy that private agencies have been successfully replaced by institutional agencies as they account for only 2 per cent of the total borrowings.

INPUT-OUTPUT ANALYSIS

A. Input

Percentage distribution of costs of raising high yielding and non-high yielding varieties of paddy by size of farms

The percentage distributions of costs in raising the high yielding and non-high yielding varieties are more in human labour ranging from 34.47 per cent to 37.06 per cent and 20.03 per cent to 41.27 per cent in high yielding and non-high yielding varieties respectively. The next important item is rental value of own land ranging from 22.82 per cent to 29.60 per cent in high yielding varieties and 27.83 per cent to 37.2 per cent in non-high yielding varieties. The third is manures and fertilizers ranging from 11.46 per cent to 12.46 per cent in high yielding varieties. In all farms maximum cost is incurred in human labour ; 36.24 per cent and 32.08 per cent in high yielding varieties and non-high yielding varieties respectively. The second is accounted for rental value of own land ; 22.89 per cent and 33.45 per cent in high yielding and non-high yielding varieties. The manures and fertilisers is next in percentage to total cost i.e., 8.75 per cent and 8.38 per cent in high yielding and non-high yielding respectively.

Cost of Cultivation per hectare on the basis of different cost concepts

Generally four cost concepts namely Cost A_1, Cost A_2, Cost B and Cost C are used in farm managment studies.

Cost A_1 : This cost approximates the actual expenditure incurred in cash and kind. It includes wages of human labour (hired), bullock labour, cost of seeds, manures and fertilizers, irrigation charges, depreciation, interest on working capital, and land revenue, etc.

Cost A_2 : Cost A_1 +rent paid for leased-in land.

Cost B : Cost A_2+Rental value of own land and interest on fixed capital.

Cost C : Cost B+Imputed value of family labour, or cost C is equivalent to total inputs.

The total input cost of raising high yielding and non-high yielding varieties of paddy per hectare has been estimated on the various cost concepts. Inputs falling in various cost are as follows in the table.

Table 6

Estimation of different cost concepts per hectare by size of farms

Sl. No.	Different costs	Size of farms				
		Below 1.00	1.00 to 2.00	2.00 to 3.00	3.00 & above	All farms
(1)	(2)	(3)	(4)	(5)	(6)	(7)
High yielding						
1.	Cost A_1	898.78	881.21	888.51	719.48	861.14
		(147.16)	(151.99)	(193.72)	(124.44)	(151.81)
2.	Cost B	1389.59	1356.02	1345.46	1179.10	1328.82
		(125.95)	(128.37)	(146.22)	(113.76)	(128.12)
3.	Cost C	1945.39	1896.97	1875.46	1641.36	1858.66
		(120.38)	(153.32)	(164.47)	(153.73)	(137.82)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-High Yielding						
1.	Cost A_1	610.74	577.76	458.75	578.16	565.21
2.	Cost B	1103.88	1046.79	920.02	1035.86	1029.43
3.	Cost C	1599.71	1230.90	1138.99	1344.38	1340.87

* Figures in parentheses show percentages to non-high yielding varieties.

The table shows that the Cost C declines with the increase in size of farms in high yielding varieties. In case of non-high yielding varietie it decreases up to the third size group, it again increases in the fourth size group.

Percentage increases over non-high yielding varieties have increased with the increase in size of farms up to the third size group, but a downward trend is observed in only fourth size group.

In all farms the percentage increases in high yielding over non-high yielding varieties in Cost A_1, Cost B and Cost C are accounted for 151.81 per cent, 128.12 per cent and 137.82 per cent respectively.

B. Value of Output

Output estimates include the value of the main as well as the value of the by-product whether sold, consumed or stocked. These estimates having been made at the rate of harvest price.

Per hectare yield by size of farms: The following table gives the yield of high yielding and non-high yielding varieties.

Table 7

Per hectare yield of grain and straw

Sl. No.	Size of group	High Yielding		Non-High Yielding	
		Grain	Straw	Grain	Straw
1.	Below 1.00	66.96 (127.43)	154.54	29.39	88.18
2.	1.00—2.00	60.00 (201.88)	97.34	19.88	59.77
3.	2.00—3.00	53.65 (235.32)	100.00	16.00	50.00
4.	3 and above	52.00 (205.84)	104.00	17.00	49.00
	All farms	58.63 (181.19)	110.12	20.85	61.35

* Figures in parentheses show percentage increases in high yielding varieties over non-high yielding varieties.

Table 7 shows a decreasing trend with the increase in size of farms in yields of high yielding and non-high yielding varieties. While the percentage of high yielding varieties over non-high yielding varieties reveals an increasing trend except in last size group.

Measures of farm profit : The following table gives the measure of farm profit in terms of net income, family labour income and farm business income.

The table 8 shows all the three measures of farm profit with the increase in size of farms. The percentage increase of high yielding over non-high yielding varieties has also increased with the increase in size of farms.

Table 8

Net Income, Family Labour Income, Farm Business Income of High Yielding and Non-high Yielding Varieties in Size Groups

Sl. No.	Size Group (hectare)	Net Income	Family Labour Income	Farm Business Income
High Yielding				
1.	Below 1.00	2879.53	3426.28	3926.09
		(160.43)	(127.01)	(102.01)
2.	1.00—2.00	2304.47	2845.42	3320.23
		(361.66)	(319.01)	(118.00)
3.	2.00—3.00	1897.44	2427.86	2839.39
		(625.57)	(387.68)	(207.14)
4.	3.00 and above	2050.64	2512.90	2972.52
		(1519.80)	(474.30)	(232.27)
	All farms	2285.45	2815.19	3282.87
		(404.86)	(279.00)	(171.79)
Non-High Yielding				
1.	Below 1.00	957.13	1452.98	1946.10
2.	1.00—2.00	499.25	683.36	1152.40
3.	2.00—3.00	261.07	497.98	941.25
4.	3.00 and avove	126.62	436.14	894.84
	All farms	432.19	743.63	1207.94

* Figures in parantheses show percentage increases in high yielding over non-high yielding varieties.

The percentage increases of high yielding over non-high yielding varieties also witnessed an increasing trend with the increase in size of farms in all the measures of farm profit.

Output-Input Ratio

The output to input ratio reveals how many times the output has increased over a given level of input. It is a simple ratio which helps us to assess the amount of gross income generated in each crop. As far as high yielding and non-high yielding varieties are concerned there is a significant difference between their costs and returns and consequently in their ratios, as can be seen below.

Table 9

Output to input ratios of high yielding and non-high yielding varieties in different size groups

Sl. No.	Size of farms (hectares)	Output Rs.	Input Rs.	Ratio
High yielding				
1.	Below 1.00	4824.87	1945.34	1 : 2.48
2.	1.00—2.00	4201.44	1896.97	1 : 2.21
3.	2.00—3.00	3772.90	1875.46	1 : 2.01
4.	3.00 and above	3692.00	1641.36	1 : 2.24
	All farms	4144.01	1858.56	1 : 2.22
Non-high yielding				
1.	Below 1.00	2556.84	1599.71	1 : 1.59
2.	1.00—2.00	1730.15	1230.90	1 : 1.40
3.	2.00—3.00	1400.00	1138.99	1 : 1.22
4.	3.00 and above	1471.00	1344.38	1 : 1.09
	All farms	1773.06	1340.87	1 : 1.36

The output to input ratio has decreased with increase in size of farms in both high yielding and non-high yielding varieties. This reveals that there is a considerable decrease in output with the increase in size of farms, which in turn is influenced by yield of grain and by-products. The ratios have decreased from 2.48 to 2.24 in high yielding varieties and 1.59 to 1.09 in case of non-high yielding varieties. As far as all farms are concerned the table shows much difference between high yielding and non-high yielding varieties—2.22 and 1.36 respectively—thus indicating profitability of high yielding varieties.

Functional analysis

Of the various functions available the Cobb-Douglas function has been most widely used in algebraic form of production function. The popularity of this function stems from the fact that it permits diminishing or increasing or constant returns to use as many degrees of freedom as would the other functional forms exhibiting the same phenomenon. The regression coefficients are elasticities of production which remain constant throughout the relevant ranges of inputs. As such the same regression coefficients indicate the returns to scale. As the function is linear in logarithims the estimation problems are not excessive. The form of function is

$$y = a x_1^{b_1} \; x_2^{b_2} \; x_3^{b_3} \; x_4^{b_4} \ldots\ldots\ldots\ldots\ldots x_n^{x_n}$$

expressed in logarithim function is transformed into a linear function :

$$\log\ y = \log a + b_1 \log x_1 + b_2 \log x_2 + b_3 \log x_3 \ldots + b_n \log x_n$$

where,

y =output

x_i=refers to $_i$th resources

a =constant

and b_i is the elasticity of production of $_i$th resources.

Selection of variables : The following variables have been selected in the present study.

(i) *Output* (y) : The output refers to the gross values of farm products in rupees. It includes cash received from sales of farm produce, value of the produce used in household or kept for sowing, value of produce given over to labour as wages of customary charges to labour, washermen, carpenters, etc., and the value of by-products sold or feed to cattle or carried over to next years stock as feed.

(ii) *Land* (x_1) : The land input refers cropped area in hectares. The variations in soil type have not taken into account due to homogeneity of the area.

(iii) *Human labour* (x_2) . Human labour refers to standard male adult days. The work performed by female and male child labourers has been converted into adult days and the wages are worked out in rupees.

(iv) *Value of seeds* (x_3) : The values of seeds are valued at market price for both high yielding and non-high yielding varieties, whether bought or home produced.

(v) *Manures and Fertilisers* (x_4) : The value of chemical fertilisers, oil cakes and manures (Rs.) has been taken as a combined input because all the fertilizers and manures in the area are generally used together.

Fitting the function : Functions have been fitted as for business as a whole for both high yielding and non-high yielding varieties through least square technique.

Table 10

Production elasticities of input factors, returns to scale, coefficient of multiple determination and number of observations

Srl. No.	Variables	Units	Elasticities	
			High yielding	Non-high yielding
1.	x_1 land	Hectares	0.9912**	0.8806**
2.	x_2 Human labour	Rs.	0.0017*	0.0008
3,	x_3 Value of seed	Rs.	0 0085*	0.0042*
4.	x_4 Manures & Fertilizers	Rs.	0.0071**	0.0038**
	b_i		1.0085	0.8994
	$\bar{R}^2$		0.97837**	0.89830**
	Value of a		24.751	18.865
	No. of observations		41	41

* Significant at 1% level, ** Significant at 5% level.

Coefficient of Determination ($\bar{R}^2$)

The values of coefficient of determination are 0.97837 and 0.89830 for high yielding and non-high yielding varieties respectively and are significant at 5 per cent level of significance. Thus, the functions fit reasonably to the data as a good amount of variation is accounted for by the inputs in both the fitted functions.

Net regression coefficients: A net regression coefficient for any input in the alone function denotes the percentage increase in gross value of output resulting from 1 per cent increase in quantity of that input with all other inputs fixed at a given level. The elasticity of production is with respect to land in hectares, followed by value of seed (Rs.) manures and fertilizers (Rs.) and human labour (Rs.) in both the varieties. 1 per cent increase in the value, human labour (Rs.), would have resulted in 0.0017 per cent in high yielding and 0.0008 per cent in non-high yielding varieties of paddy. Similarly value of output would have increased by 0.9912 per cent and 0.8806 per cent in high yielding and non-high yielding varieties of paddy for 1 per cent increase in cropped land. For the elasticities of output with respect to human labour (Rs.) are less in both the varieties. It indicates that on an average there would be relatively small increase in output due to a given increase in human labour as compared to land input. The elasticities of production for fertilizers and manures and seeds are highly significant for high yielding varieties, indicating thereby more intensive cultivation of land in high yielding varieties. The elasticities of production of land are significant at 5 per cent level of significance in both the varieties, indicating thereby the scope of increased use of this input factor.

Returns to scale : The sums of elasticities for high yielding and non-high yielding varieties are 1.0085 and 0.8894 respectively and are significantly different from unity, thereby indicating the operation of increasing and decreasing returns to scale in high yielding and non-high yielding varieties.

Conclusions

From the above analysis two contrasting differences can be observed between small farmers and large farmers. The small farmers (below 1.00 hectare) have 34 per cent of their operational areas under high yielding varieties and 94 per cent of their irrigated areas under shallow tubewells. The large farmers have only 17 per cent of their operational area under high yielding varieties and 99 per cent of irrigated area under shallow tubewells. The farm production credit used by these two size groups of farmers indicates that the small size group has obtained less credit than the large size group. The small size groups have used their credit exclusively for high yielding varieties which can be observed from the net income which is more in comparison to the large size groups. The large farmers after obtaining more credit for the cultivation of high yielding varieties allotted it to the cultivation of non-high yielding varieties. Thus the high-yielding varieties get less resources (fertilisers, insecticides, etc) resulting in less net profit. It was also asked why these farmers were reluctant in cultivating high yielding varieties. They expressed risk and uncertainty as the main factor.

Secular Changes in the Demand For Currency

P. H. Siegel and U. S. Bawa*

Introduction

The demand for currency has to be distinctly differentiated from the demand for money (stock). Their demands are conspicuosly different by virtue of the nature of their competitiveness, sometimes even their complementarity, especially in the light of recent trends of a 'cashless' society, currently being transformed into a 'checkless' society. There have been studies that have deliberated to estimate the demand for money and currency for a short run but restricted to the realm of a firm.[1] Such studies are good bench marks but do not have adequate advantage for their overall generalizations both over time and at aggregated levels. This present study has been attempted on an aggregative basis for the U. S. economy for a period of nearly 24 years ranging from 1947 to 1970. It focuses its attention on some of the forces which influence the public's long run demand for the currency component of the transactions demand for money.

There does exist a long history of theoretical and empirical work devoted to understanding the transactions demand for cash. (1, 3, 5, 6, 7, 8, 9, and 10). The long run demand, however, is not a simple mechanical extension of the short run outlook. In the wake of impending transitional nature of the short run demand for currency, the authors considered the secular movements to be of more prime concern and of positive advantage for predicting the policy implications.

Needless to mention that the seasonal and cyclical variations that are irksome in the short run will iron themselves out over the course of longer periods.

The current thrust in the area of the transactions demand for currency is based on the foundations built by Tobin (1) and Baumol (9) who brought together the earlier dichotomized demand for money functions of Keynes. Recently, a number of studies have attempted to extend and Tobin-Baumol work and estimate these relationships empirically. Sastry and others, (3, 7 and 8) however, have limited their attention to the transactions demand for currency by business firm. In addition, other studies have been primarily looking at relatively shorter time intervals. Our approach differs from previous studies in that it considers the total economy's demand for currency and over a longer time horizon. In addition, this paper has paid attention to the impact of financial innovations on the public's demand for currency. It has been pointed out that if the financial system can partially change the characteristics of money by improving the payments mechanism, that the non-bank public will tend to alter its demand for money. Moreover, it also seems likely that if the payments mechanism is improved, the income velocity of money will rise (4). The authors of this paper seek to shed some light on these issues by arguing that the growth and the widespread dissemination of bank and other credit cards has altered the public's demand for currency, given any particular level of interest rate and income.

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Methodology

The demand for currency M_c^d has been investigated by means of its relationships, both direct and indirect, to the income velocity, the increase of which will be symptomatic of the declining demand. This can arise if either income (Y) rises or demand money falls, or if (Y) rises faster than the increases in demand for money. Firstly, the growth of income velocity of money, V_1 has been compared to the corresponding growth in the income velocity of currency, V_c. Secondly, a behavioral relationship has been estimated between V_c and the growth in the use of bank and other credit cards and the government long term (3-5 years) bond rates.

(A) Growth rates of the income velocities of money and currency have been estimated using the data relating to the period 1947-1970. (Appendix I) The results are as follows :

Table

Growth Rates in Income Velocities of Money V_1 and Currency V_c for United States, 1947-70

	Trend	Annual Rate of Growth (%)
V_1	.41	3.29
V_c	.52	3.26

It in observed that the income velocities of money and currency have been growing on a steady annual rate of about 3.3% during the period under consideration. Both the time series appear to have significant trends embedded into them. This steady increase in both the income velocities of money and currency strongly suggests that the demand for currency has been declining relative to the growth of income (6.4%). The growth and proliferation of near-moneys as well as financial innovations in the payments mechanism such as the use of bank and other credit cards have contributed to this secular decline.

(B) In the traditional sense, the demand for currency will depend on the growth of income representing all the legitimate transactions, different interest rates, population, the volume of checks and the growth of credit. However, the data on some of these variables pose severe limitations. Futhermore, there are simultaneous interactions between the explanatory variables implicit in these kinds of functional relationships. Therefore, we have selected the income velocity of currency as the dependent variable, to be explained by the growth of credit cards, and government long term bond rates.

The larger the growth in checks and credit cards, the smaller will be the demand for currency and smaller will be the income velocity for currency whereas larger are the bond rates, the larger will be the income and thereby the larger will be the velocity. The variables, income velocity of currency V_c, and credit card growth, D, have been chosen so as to minimize the role of the trend variable and multi-collinearity. The data used for this purpose is the monthly data from 1968 to June 1973 averaged for each quarter (Appendix II). The functional relationships of the income velocity has been assumed linear and without lags and is of the following form :

V_c=f(B, C, T) where

V_c : Income velocity of currency

B : Interest rate on 3-5 year government securities

C : Volume of credit cards

and T : Trend variable

In this formulation, both the variables B and C are deemed to be predetermined. It has also been assumed that V_c is the only endogenous variable, namely, income velocity of currency is explainable by the growth of credit cards and the government bond rates, but the converse may not be true.

The relationship as estimated by regression analysis is as follows :

$$V_c=20.565+0.093B+0.\text{[illegible]}03C+0.271T$$

$$(0.132) \quad (0.014) \quad (0.219) \qquad R^2=.58$$

The signs of the coefficients so estimated do satisfy the test of logic. B and V_e and C and V_c are directly correlated, as formuleted above. But these coefficients do not turn out to be statistically significant at the conventional level of significance, although the trend variable is picking up a part of the variation of the income velocity. Part of the explanation of these unsatisfactory results is the coincidence of including certain time periods in this exercise which by themselves were responsible for an erratic behavior of the economy. Latane and others[1] have shown that income velocity and interest rates are systematically related by using similar data for a different period. The erratic relationship as estimated here may be explained as follows :

(i) The year 1970-71 was a year of recession.[2] To a certain degree, the growth of credit cards was moderate after several years of rapid growth, indicating the approach of maturity (some form of flexible ceiling) in the credit card plans. Futhermore, during this slump, banks were not willing to make fresh commitments or to grant extensions to their current credit obligations.

(ii) The period 1972-73 experienced a peculiar behavior of the interest rates of the government securities. It had abrupt peaks and troughs and the economic system did not have enough breathing time for adjusting itself to such rapid exogenous but stochastic (random) fluctuations.

Under normal circumstances, the income velocity of currency, for given levels of income and interest rate, will fluctuate as a result of the innovations of the financial payments mechanisms. Unfortunately, we ran into certain abnormal periods. About half the observations for the period under consideration related to non-normal circumstances.

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[1] Latane. H. A. "Cash Balances and the Inrerest Rate—A Pragmatic Approach" Review of Economics and Statistic. November, 1954.

Bronfenbenner. Martin and Thomas Mayer, "Liquidity Functions in the American Economy", Econometrica, October, 1960.

Leigen, Ronald, "Demand and Supply Functions for Money in the United States", Econometrica, October, 1964.

Lee. Tong Hun "Alternatives Interest Rates and the Demand for Money", The Empirical Evidence" American Economic Review, December, 1967.

[2] Brimmer. Andrew F. "Trends and Developments in Credit Card Banking". Paper presented to tha National Economist Club, September, 1972.

We feel that this kind of experiment may prove to be more successful if conducted over earlier time periods (if the relevant data can be made available) which can be classified as relatively normal years when exogenous elements were not overly active to vitiate basic economic considerations. This preliminary study has indicated that there is no

Appendix 1

Annual Data Relating to the Income Velocities of Money and Currency. 1947-1973 for the United States

	(Current dollars) (1)	(Billions of dollars) Currency Comp. of the Money Supply (2)	Money Supply (3)	* V_c (1)÷(2)	† V_1 (1)÷(3)
1947	230.3	26.1	109.9	8.86	2.10
1948	257.6	25.7	109.5	10.02	2.35
1949	256.5	25.2	110.3	10.18	2.33
1950	284.8	24.8	112.5	11.48	2.53
1951	238.4	25.8	116.5	12.73	2.82
1952	345.5	26.3	124.4	13.14	2.78
1953	364.6	27.1	126.6	13.45	2.88
1954	364 8	26.9	127.8	13.56	2.85
1955	398.9	27.1	132.0	14.69	3.02
1956	419.2	27.6	134.4	15.19	3.12
1957	441.2	27.8	135.0	15.87	3.27
1958	447.3	27.9	136.2	16.03	3 28
1959	483.7	28.2	140.2	17.15	3.45
1960	503.7	28.1	139.5	17.93	3.61
1961	520.1	29.0	142.6	17.93	3.64
1962	560.3	30.1	145.8	18.61	3.84
1963	590.5	31.4	149.7	18.81	3.94
1964	632.4	33.0	156.5	19.16	4.04
1965	684.9	35.0	162.5	19.57	4.21
1966	749,9	37.2	169.0	20.16	4.44
1967	793.9	38.4	175.5	20.67	4.52
1968	865 0	42.0	186.3	20.60	4.64
1969	931.4	45.0	197.2	20.70	4.72
1970	976.5	47.5	209.2	20.56	4.67

* V_c : Income velocity for currency.

† V_1 : Income velocity for money.

Source : Federal Reserve Bank.

Appendix II Quarterly Data Relating to Income Velocities of Money and Currency, Government Securities Rates and Credit Cards for 1968-73 for the United States

(Billions of dollars)

(1) Year	(2) Quarter	(3) GNP	(4) Currency Component	(5) Money Supply	(6)* $V_c=(3)\div 4$	(7)† $V_1=3\div 5$	(8) Rate for U.S. Government 3-5 years issues	(9) Credit Cards (Million dollars)
1968	(1)	831.2	40.1	181.4	20.72	4.58	5.78	2072
	(2)	852.9	41.5	186.2	20.55	4.58	5.73	2055
	(3)	871.0	42.1	188.5	20.68	4.62	5.30	2068
	(4)	892.5	42.3	192.1	21.10	4.64	5.99	2110
1969	(1)	908.7	43.3	195.2	20.98	4.65	6.33	2098
	(2)	924.8	44.2	198.7	20.92	4.65	6.60	2092
	(3)	942.6	44.9	199.1	21.00	4.73	7.50	2100
	(4)	151.7	45.5	199.6	20.91	4.76	7.72	2091
1970	(1)	959.5	46.5	206.6	20.63	4.65	7.60	2063
	(2)	971.1	47.2	209.5	20.51	4.63	7.75	2057
	(3)	985.5	48.1	211.5	20.48	4.65	7.61	2048
	(4)	988.4	48.6	214.0	20.33	4.61	6.23	2033
1971	(1)	1020.8	49.4	218.6	20.82	4.71	5.23	2082
	(2)	1043.1	50.9	224.1	20.49	4.65	6.01	2049
	(3)	1060.8	51.8	227.6	20.47	4.66	5.98	2047
	(4)	1078.1	52.0	228.1	20.73	4.72	5.65	2073
1972	(1)	1109.1	53.1	231.2	20.88	4.79	5.62	2088
	(2)	1139.4	54.2	235.5	21.02	4.84	5.83	2102
	(3)	166.5	54.8	248.5	21.28	4.69	6.01	2128
	(4)	1169.2	56.1	253.4	21.37	4.73	6.05	2137
1973	(1)	1242.5	57.4	256.5	21.64	4.85	6.80	2164
	(2)	1271.0	59.2	267.5	21.47	4.84	6.78	2147

*V_c : Income velocity for currency. †V_1 : Income velocity for money. Source : Federal Reserve Bank.

significant institutional impact of credit cards on the average balance held by the business firms. However, the data, at present, only lead to highly aggregative analysis. More research is needed in which the household demand for currency can be extricated from the demand for currency from other sources such as business firms.

References

1. Baumol, William J., "The Transaction Demand for Cash : An Inventory Theoretic Approach," Quarterly Journal of Economics, November, 1952.

2. Brandel. R. E. and C. A. Leonard, "Bank Charge Cards : New Cash or New Credit." Michigan Law Review, May, 1971.

3. Draper, J. E. and C. A. Hawking, "On the Transactions Demand for Cash : Comment," Journal of Finance, December, 1969.

4. Hester, D. D., "Monetary Policy in the Checkless Economy," Journal of Finance, May, 1972.

5. Johnson, H. G., "A Note on the Theory of Transactions Demand for Cash," Journal of Money, Banking, and Credit, August, 1970.

6. Johnson, H. G., "Notes on the Theory of Transaction Demand for Cash," in Essays in Monetary Economics, Cambridge, MA : Harvard University Press, 1969,

7. Rama Sastry, A. S.—The Effect of Credit on the Transactions Demand for Cash Reply ; Journal of Finance, December, 1971.

8. Rama Sastry, A. S., The Effect of Credit on the Transactions Demand for Cash, Journal of Finance, September, 1970.

9. Tobin, James, "The Interest Elasticity of Transactions Demand for Cash," Review of Economics and Statistics, August, 1956.

10. Wrightsman, D. and J. Teiniko, "On the Measurement of Opportunity Cost in Transactions Demand Models, Journal of Finance, September, 1971.

Centre-States Financial Relations—III

Subhash Chandra Sarker*

While considering the debt position of the States it had to be borne in mind that now the States have been receiving less from the Central Government than they are expected to pay back. The total amount of loans (gross) to the States for Plan and non-plan purposes (including Rs. 130 crores towards the scheme of special accommodation to meet the overall non-Plan gaps of some States) was estimated in 1972-73 Central budget at Rs. 1091 crores. In the same year the repayment of loans by the States to the Centre was estimated at Rs. 758 crores and payment of interest at Rs. 345 crores. In other words, the States were expected to pay to the Centre Rs. 1103 crores while they were getting as loan only Rs. 1091 crores. It was clear that the State Governments could not be expected to pay back the huge debt to the Centre. At the end of 1968-69 the total outstanding debt of the State Governments was Rs. 6923 81 crores compared with Rs. 11,673 crores five years later. In 1968-69 the average per capita debt of the States was Rs 132.96. The per capita debt in the Hindi States was : Bihar Rs. 110.83, Haryana Rs. 164.73, Madhya Pradesh Rs. 118.03, Rajasthan Rs. 197.39 and Uttar Pradesh Rs. 92.0˙. True, per capita tax revenue in most of the Hindi States was less than the average (Rs. 21.92) for all the States (Bihar Rs. 12.06) ; Haryana Rs. 28.95 ; Madhya Pradesh Rs. 16.94, Rajasthan Rs. 19.50 and Uttar Pradesh Rs. 14.60. It has to be borne in mind at the same time that per capita income in these States (Bihar Rs. 265 ; Haryana Rs. 445 ; Madhya Pradesh Rs. 325 ; Rajasthan 314 and Uttar Pradesh Rs. 306) was again much less than the average (Rs. 369 in 1964-65), the only exception being Haryana which also had a per capita taxation (Rs. 28.95) higher than the average for all the States. Even then the States were expected to raise Rs. 1108.7 crores of additional tax revenue during the Fourth Five Year Plan of which the share of the Hindi-speaking States was Rs. 445 crores (Bihar Rs. 100 crores, Haryana Rs. 30 crores, Madhya Pradesh Rs. 100 crores, Rajasthan

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Rs. 40 crores and Uttar Pradesh Rs. 175 crores). Between 1967-68 and 1973-74 the tax revenue of the State Governments rose from Rs. 1086.63 crores to Rs. 2013.56 crores or by Rs. 926.93 crores. Of this increase, the Hindi-speaking States accounted for Rs. 226.41 crores (Bihar Rs. 45.32 crores, Haryana Rs. 38.75 crores, Madhya Pradesh Rs. 49.40 crores, Rajasthan Rs. 35.90 crores and Uttar Pradesh Rs. 57.04 crores). Obviously most of the Hindi States miserably failed in raising even the amount of resources they had agreed to raise during the period of the Fourth Five Year Plan. There was no change even after taking non-tax revenue into account. The increase in revenue for Bihar came to Rs. 50.58 crores (against Rs. 100 crores agreed to) ; Haryana Rs. 34.58 crores (against Rs. 30.00 crores) ; Madhya Pradesh Rs. 67.08 crores (against Rs. 100 crores) ; Rajasthan Rs. 32.20 crores (against Rs. 40 crores) and Uttar Pradesh Rs. 33.88 crores (against a promise of Rs. 175 crores). The States taken together failed to raise the additional resource promised by them, the Hindi-speaking States failing more miserably. This further affected their capacity to repay the debt to the Central Government.

Famine Relief Grant

All the Finance Commission considered the necessity of taking into account the likely expenditure on relief measures incurred by the State Governments on account of natural calamities like droughts, floods and famine. The Fifth Finance Commission assessed the amounts likely to be required on this account on the basis of the average expenditure for the nine years 1957-58 to 1965-66, increased by 25 per cent in each case. However, the provision allowed by the Fourth Finance Commission was retained wherever it was higher than the figure worked out by the Fifth Finance Commission. The Fifth Finance Commission allowed an average annual provision of Rs. 14.47 crores on this basis to the different States with the observation that "while continuing the practice of making a separate annual provision for expenditure under famine relief we consider that the excess of such provision over the actual expenditure of famine relief in each year should be transferred to a separate Famine Relief Fund, which may be drawn upon in other years for meeting expenditure required in excess of the provision allowed by us". (Para 6.17 of the Report).

As it turned out, the years covered by the recommendations of the Fifth Finance Commission witnessed some of the worst spells of drought and floods in the history of the country. That called for a much larger allocation for famine relief by the State Governments. Thus, while in 1972-73 disbursements on account of relief were budgeted to rise by Rs. 272 crores (4.4 per cent) over the preceding year (1971-72), they went up by as much as Rs. 874 crores (14.2 per cent). Non-developmental expenditure of the State Governments went up by more than 20 per cent against 3.8 per cent estimated earlier. Four-fifths of this increase in expenditure were accounted for by famine relief. Expenditure on famine relief went up from the budgeted provision of Rs. 67 crores to Rs. 317 crores. Nine States—Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and West Bengal accounted for Rs. 292 crores or over 90 per cent of the total famine relief expenditure. An idea of the increase in expenditure on famine relief in recent years was given by the fact that whereas during 1966-67 and 1967-68—two of the worst years of famines in the recent past expenditure on famine relief was Rs. 78 crores and Rs. 87 crores respectively, in 1972-73 the expenditure reached the staggering amount of Rs. 317 crores. The provision of Rs. 279 crores during the 1973-74 budget year was also several times higher than that in any of those two years. Expenditure on famine relief as percentage of the total revenue expenditure of the States fell from 5.1 per cent in 1969-70 to 3.1 per cent in 1971-72 but was up hundred per cent in the following year (1972-73) when it jumped up to 6.6 per cent. In the budget for 1973-74 expenditure on famine relief was estimated at 5.4 per cent of the total expenditure. The relative position in the Hindi-speaking states was as follows :

Expenditure on famine relief as percentage of total revenue expenditure

Name of State	1969-70 (Accounts)	1970-71 (Accounts)	1971-72 (Accounts)	1972-73 (Revised estimate)	1973-74 (Budget)
Bihar	0.7	1.5	5.3	5.6	1.4
Madhya Pradesh	1.7	1.2	0,9	5.1	4.5
Rajasthan	30.3	20.3	3.3	13.3	22.3
Total (All States)	5.1	3,1	3.6	6.6	5.4

The Sixth Finance Commission has questioned the genuineness of this increased expenditure on relief. "It is our distinct impression", the Sixth Finance Commission has said, "that there has been a good deal of avoidable waste in the expenditure incurred in the name of drought relief......" (Page 63 of *Report of the Finance Commission* 1973). The Sixth Finance Commission has rejected the proposal for setting up a national famine relief fund fed by Central and State contributions. It has instead recommended larger provisions for the development of drought and flood-prone areas during the Fifth Five Year Plan. Under the annual provisions of Rs. 50.71 crores suggested by the Sixth Finance Commission for the different States, Rajasthan would get the largest amount of Rs. 10.19 crores. Bihar would get Rs. 4.61 crores, Haryana Rs. 1.4 crores, Himachal Pradesh Rs. 3 lakhs, Madhya Pradesh Rs. 3.41 crores, Andhra Pradesh Rs. 4.31 crores, Maharashtra Rs. 4.17 crores, West Bengal Rs. 6.61 crores, Tamil Nadu Rs. 1.52 crores, Orissa Rs. 3.58 crores and Karnataka Rs. 1.91 crores, among others.

The Kulak Lobby

A peculiar aspect of the Government in the Hindi-speaking States is the continued hold of the landed gentry over the administration. This is nowhere better illustrated than in the treatment by the Government in these States of land revenue. In most of the States land revenue is fixed in monetary terms. Whatever may have been the position earlier, with the steep rise in the prices of agricultural products the burden of incidence of land revenue on agriculturists has become almost nil. Since it is a tax levied on ownership of land, there is no question of its being inequitable. The inequity, if there was any, lies in the fact of this tax not being progressive enough to tax the richer sections at a higher rate as is done in the case of income-tax where persons with higher incomes have to pay taxes at a higher rate. While considering ways and means of augmenting revenue it was thus open to most of the State Governments to increase land revenue steeply without at all adding to the incidence of the tax which is really very low as can be seen from the following tables.

Since agricultural producers in all States now got more money out of their produce per hectare the incidence of land revenue was, in fact, declining very fast. The per capita land revenue (including agricultural income-tax) in 1967-68 was only 64 paise in a year in Bihar, Rs. 1.57 in Haryana, Rs. 1.94 in Rajasthan and Rs. 3.63 in Uttar Pradesh, the all-India average being Rs. 2.36. Compare with this tax demand the per capita expenditure of the various state Governments on agriculture and animal husbandary which was (in

Incidence of land revenue per hectare of sown area

States	Land Revenue in 1967-68 (Rs. Crores)	Net area sown in 1965-66 (1000 hectares)	Land Revenue per hectare (Rs.)
Bihar	3.24	8338	3.89
Haryana	1.43	3403	4.20
Madhya Pradesh	7.26	16529	4.39
Rajasthan	10.14	14131	7.18
Uttar Pradesh	25.33	17343	14.61
All-India	98.95	134721	7.34

1967-68) Rs. 3.00 in Bihar, Rs. 3.31 in Haryana, Rs. 2.58 in Madhya Pradesh, Rs. 2.89 in Rajasthan and Rs. 2.05 in Uttar Pradesh. There was a great scope for augmenting the income of the State Governments by imposing a surcharge on land revenue on owners of land above a predetermined ceiling. It was not done and several State Governments went to the other extreme of abolishing land revenue. As it was, many State Governments had not been collecting land revenue even before deciding to abolish the same. The arrears of land revenue in the Hindi-speaking States were as follows : Bihar Rs. 10.71 crores, Haryana Rs. 0.34 crores, Madhya Pradesh Rs. 3.77 crores, Rajasthan Rs. 5.50 crores, and Uttar Pradesh Rs, 9.04 crores (for Bihar and Uttar Pradesh the figures are for March 1969, for others for 1968). Indeed, over the years the percentage of arrears of land revenue to the total demand was going up as can be seen from the following table :

Percentage of Land Revenue Arrears to the Total Demand

States	1964-65	1965-66	1966-67	1967-68
Bihar	29.13	31.22	66.77	85.44
Haryana	—	—	30.09	17.80
Madhya Pradesh	13.29	20.07	40.25	37.78
Rajasthan	32.91	51.08	51.44	33.27
Uttar Pradesh	9.43	11.38	32.10	21.24

Instead of making any effort to collect the huge arrears the Governments in several States abolished the tax altogether or announced various concessions. The Fifth Finance Commission estimated the loss on this account during the five-year period 1969-70 to 1973-74 as follows : Madhya Pradesh Rs. 9 crores, and Uttar Pradesh Rs. 26.25 crores. The scope for increasing land revenue and imposing an agricultural income tax is given by the fact that as a whole taxes on land constitute only a negligible fraction of the agricultural incomes of the States. Taxes on land in 1967-68 were only 0.52 per cent of the agricultural income of Bihar, 0.63 per cent in Haryana, 1.16 per cent in Madhya Pradesh, 2.49 per cent in Rajasthan and 0.78 per cent in Uttar Pradesh. The all-India average was 1.34 per cent.

Total Transfer to States (1952-53 to 1973-74)

The First Finance Commission had made recommendations according to which a total sum of Rs. 322.16 crores was transferred to the States from the Centre (Rs. 283.36 crores as share of taxes and Rs. 38.80 crores as grants) between 1952-53 and 1956-57. Under the recommendation of the Second Finance Commission a sum of Rs. 1048.97 crores was transferred from the Centre to the States during the five years 1957-58 to 1961-62 (of which Rs. 851.77 crores represented share of taxes and Rs. 197.20 crores grants). During the three years 1962-63 to 1965-69 a sum of Rs. 1310.76 crores was transferred to the States from the Centre (Rs. 1066.76 crores as share of taxes and Rs. 244 crores as grants). The transfer from the Centre to the States under the recommendations of the Fourth Finance Commission during the three years 1966-67 to 1968-69 totalled Rs. 1745.02 crores (Rs. 1323.19 crores share of taxes and Rs. 421.83 crores of grants.) During the five years 1969-70 to 1973-74 covered by the recommendations of the Fifth Finance Commission the States received as share in Central taxes a total sum of Rs. 4532.5 crores—Rs. 625.4 crores in 1969-70, Rs. 755.7 crores in 1970-71, Rs. 942.2 crores in 1971-72, Rs. 1062.9 crores in 1972-73 (revised estimate) and Rs. 1146.3 crores in 1973-74 (budget estimate). The Commission had recommended grants totalling Rs. 637.85 crores. Thus the total transfer from the Centre to the States during the period covered by the recommendations of the Fifth Finance Commission came to Rs. 5170.35 crores. (The amount estimated by the Fifth Finance Commission was actually Rs. 4266.30 crores. But as the actual revenue was larger than estimates, the actual receipts by the State Governments will be higher at about Rs. 5170.35 crores (Rs. 5316 crores, according to the calculation of the Sixth Finance Commission). During the last twentyone years a total sum of Rs. 9597.26 crores was transferred from the Centre to the States of which Rs. 8057.58 crores represented the States' share in the Central taxes and Rs. 1539.68 crores as grants under Article 275 of the Constitution. As our analysis above has shown, the States were entitled to a much higher amount. The sixth

(Continued on page 221)

A Note on Rupee-Rouble Controversy

M. M. Kothari

The Indian rupee has been tied in parities with different currencies in terms of fineness of gold under the supervision of International Monetary Fund. However, non-member countries, especially communist group countries who hate all the systems devised by the capitalist world, either do not have significant trade dealings with the non-communist world or if they establish any such dealings at all these are governed by separate trade pacts wherein currency exchange rates are also decided or dealings are recorded in only one currency, e.g., India's rupee trade agreements with these countries. Communist group countries conduct their mutual trade dealings on the basis of 'transferable rouble' but rouble does not have importance in the non-communist world. It is, therefore, reckoned as a soft currency and is not convertible into any other currencies of the western world in its foreign exchange markets.

India's trade relations with the communist world, i.e., Bulgaria, Czechoslovakia, East Germany, Hungary, Yugoslavia and the U.S.S.R., are governed by the rupee trade agreements entered into with these countries. India's total trade at present is about Rs. 5,400 crores of which nearly 16 per cent is done with East European countries and Soviet Union alone contributes 10 per cent to our total trade. Moscow has nearly doubled its trade with India in the half decade ending 1973-74. During all these years we earned trade surplus with the U.S.S.R. Of late our imports are exceeding exports to Soviet Union because of our greater dependence on food front and other technical aspects. During the first four months of the financial year 1974-75 India's balance of trade with this country is in deficit by Rs. 68.81 crores and is likely to increase to over Rs. 200 crores at the end of the year.

The first rupee payment agreement was concluded with the U.S.S.R. in December 1953. Presently, India'a trade relations with

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this region depend upon the provisions of 1959 USSR—India Trade Agreements according to which bilateral transactions are to be completed on rupee payment basis. The rates of exchange between Soviet Union and India are prescribed in the trade and payments agreement and while entering into a fresh agreement changes in international prices and of the goods to be traded are also taken into account.

It is true that the Soviet Union proposed to give increased economic assistance under the 15-year economic agreement entered into with India during 1973 and in the recent past she stood by India in her economic and military crises. We have all the respect for this country which has proved quite friendly on many occasions but the recent events around rupee-rouble parity controversy have hurt our friendly feelings with the USSR.

Table I

India's Trade with U.S.S.R.

Years	Imports	Exports	Balance of Trade	India's Total Trade with USSR	India's Trade with the whole world
1969-70	171.33	176.37	+ 5.04	348	2995
1970-71	106.13	209.85	+103.72	316	3169
1971-72	87.32	208.70	+121.38	296	3433
1972-73	114 37	304.82	+190.45	419	3838
1973-74	249.75	283.79	+ 34.04	534	5400
1974-75 (April to July)	192.10	123.30	— 68.81	315	2285

The gold content of a new rouble (introduced in January 1951) was fixed at 987.412 milligrams and since then no change has been announced by the Soviet Government. The Indian rupee's gold parity was fixed at 0.186621 grams of fine gold in September 1949 and thereafter due to devaluation of rupee in June 1966 the revised gold parity was 0.118489 grams of fine gold per rupee. One thing should be noted here that while India is one of the founder members of International Monetary Fund, Soviet Union still stays out from the Fund. Rupee's parity cannot be changed without I.M.F's sanction but Soviet Union can change her gold content of rouble on the advice of Council of Mutual Economic Aid (COMECON), established in 1949.

The State Bank of USSR has been announcing unilateral changes in the rupee-rouble parity since March 1974. Before that one rouble was equal to Rs. 8.33 or 100 Indian rupees carried 12 roubles which was an agreed exchange rate since devaluation of Indian rupee in 1966. The Soviet State Bank argues that due to fluid international monetary situation it has to effect necessary changes according to the movements in average cross rates of dollar, pound sterling and other currencies vis a-vis :Indian rupee. Thus the Russians are taking advantage of rupee-sterling link and have forgotten the basis of gold contents to which the two countries had originally agreed.

Table II

Rupee-Rouble Parity Changes

Year/Month	Grams of fine gold per rupee	Grams of fine gold per rouble since January 1961	Rupees per Soviet rouble	Roubles per 100 Indian rupees
Pre-devaluation parity in 1966	0.186621	0.987412	5.21	19.1938
Post-devaluation parity in 1966	0.118489	„	8.33	12.0048
Smithsonion Agreement in 1971 and dollar devaluation (5.38 per cent so-called devalution of rupee in terms of sterling)	„	„	8.78	11.39
March 1, 1974	„	„	10.52	9.51
April 1, „	„	„	10.41	9.61
May 1, „	„	„	10.526	9.50
June 1, „	„	„	10.47	9.55
November, „	„	„	10 60	9.44
January, 1975	„	„	11.00	9.09
February, „	„	„	11.26	8.88
March ..	„	„	11.55	8.66

Table II shows that the change in rupee rouble parity during 1971 was necessary in view of the so-called devaluation of rupee by 5.38 per cent in terms of pound sterling but subsequent changes can neither be substantiated by the changes in floating pound nor by changes in gold parities of the two currencies. During March 1975 the exchange rate as decided by the State Bank of USSR was 8.66 roubles per 100 rupees or Rs. 11.55 per Russian Rouble which shows

27.8 per cent revaluation in the value of rouble and in terms of rupees the upvaluation is by 38.65 per cent. Government of India has been of the opinion that the changes in rupee-rouble parity*announced so far affect only non-commercial transactions including Indian tourists going to Soviet Union which accounted for only one per cent of the transactions between the two countries. Presently India's non-commercial transactions with that country do not amount to more than Rs. 4 crores annually. To this extent there is nothing to be worried but as a matter of fact now the Russians intend to apply new rouble rate to all other transactions which will mean, if accepted by India, a mark-up of our debt payments to Soviet Union by Rs. 400 crores posing a great burden on Indian economy. Some of us think that revision of parity would amount to double payments to the Russians because while entering into the previous agreements we had already kept international prices in view. Even if the past credit repayments continue to be made at the old rate of Rs. 8.33 per rouble decided on the basis of statutory gold contents of the two currencies there is a fear that all future transactions would also cause heavy costs to our economy. We recall that USA's P.L-480 assistance which had accumulated to Rs. 1,701 crores till 1973 had to be converted into grant, excepting Rs. 187 crores, and thus we got relieved of a great burden. Before this agreement, we had condemned United States for plunging India into such an indebtedness and now we find that to a certain extent the Russians also have an axe to grind and we are out of the frying pan but again into the fire.

Although tne Russian and Indian experts are at the conference table to settle parity issue and it is claimed that they have found an agreed solution, the details are yet to be not known and perhaps before coming out with any statement the experts from two sides will apprise their respective governments of the so-called agreed formula and COMECON's International Investment Bank and Reserve Bank of India will also have their say in this matter. However, we feel that the Government of India should not allow any such changes in the rupee-rouble parity that are not justified by the gold contents of the two currencies as otherwise this will encourage other countries of rupee trade area to demand revaluation of their respective currencies which will be more burdensome for India to face and might invoke unwholesome speculations in the value of rupee and cause damage to the strengthening of rupee which has been appreciated by one per cent in terms of sterling and by 4 per cent in relation to dollar recently.

Further it will be in the interest of the nation if more and more commodities are traded on hard currency basis and that too through State Trading Corporation. Some of the commodities which we trade with the USSR have good prospects in the Western World and hence may be switched over to the latter. Even if we ignore this fact, we can add that often we have to export such non-traditional commodities which can easily bring us hard currency from the Western World. On the whole, India should explain to the Government of USSR that in the present context India needs help to boost her economy and therefore unilateral changes in rupee-rouble parity cannot be allowed which are detrimental to India's interests. Better we should pursuade the USSR to accept membership of the I.M.F. so that rich Western countries' hegemony over the policies of I.M.F. is broken and at the same time roubie may begin to play an international role.

(Continued from page 216)

Finance Commission has recommended a devolution of about Rs. 9608.85 crores to the States from the Centre. Of this amount the States' share of taxes and duties represented Rs. 7099 24 crores and grants under Article 275 represented Rs. 2509.61 crores. A comparative statement of the impact of the recommendations of the Fifth and the Sixth Finance Commission on the different States will show that all the Hindi-speaking States have benefited from the Sixth Finance Commission's recommendations although there has been a marginal decline in the percentage share of some of these States. In absolute terms the quantum recommended by the Sixth Finance Commission is no doubt larger than that recommended by any previous Commission. But in so far as the Sixth Finance Commission also went by the criteria of the Fifth Finance Commission in most matters, the increase is merely a reflection of the growth of revenue in general and not so much of any greater justice has been done to the States.

(Concluded)

PER CAPITA GNP

Country	(1971)	[U. S. Dollars]
Burundi		60
Afghanistan		80
Burma		80
Uganda		130
Western Samoa		140
Cape Verde Islands		180
Egypt		220
Mozambique		280

Source: World Bank Atlas 1973.

· Price Movements in India

Judging by the trend of the Wholesale Price Index, there was a welcome reduction in the intensity of inflationary pressures in the last quarter of 1974. The Wholesale Price Index registered a decline of 3 per cent in a period of five weeks starting from the peak level touched in the third week of September 1974. In November, the index remained stable and this was followed by a marginal decline in December, 1974. The decline in prices during this period, notwithstanding an unsatisfactory kharif crop, suggests some weakening in the strength of inflationary forces. However, since the decline in prices has been no more than about 5 per cent, it will be premature to conclude that this signifies a fundamental change in the outlook for prices. Since the pressure on prices continued till late in the year, it is not surprising that the Wholesale Price Index rose in 1974 by 27.3 per cent as against 19.2 per cent in 1973. Comparing the index for December, 1974 with that of a year, earlier, the picture is somewhat more comforting, reflecting as it does the decline in prices in the last quarter of the year. However, the relief obtained so far has been relatively insignificant in the face of a steady and substantial increase in prices in the earlier part ef the year. With the improved prospects for the forthcoming rabi crop after the rains in December, 1974, inflationary expectations may recieve a further set-back. However, as of now, all that can be hoped for is a slowing down in the rate of increase in prices in the coming months. If the present trend persists, the Wholesale Price Index for March, 1975 may stand no more than 15 per cent above the level of March, 1974 as compared to an increase of almost 29 per cent between March, 1973 and March, 1974. There are still substantial imbalances in the economy and, as such, one cannot predict with confidence that inflationary pressures have been effectively brought under control.

The rapid increase in wholesale prices in the first nine months of 1974 was duly reflected in the retail prices. The Consumer Price Index advanced from 248 in September, 1973 to 334 in September, 1974. The index for October 1974 rose, however, by just one point to 335 this being due to the fact that the effect of the fall in wholesale prices noticed after the third weak of September had been felt in about half of the centres covered by the Consumer Index. In November 1974 the Consumer Index declined by four points, i.e. to 331. Overall between November, 1973 and November, 1974 there was a rise of 27 8 per cent in the Index; in the previous year, the rise had been 23.3 per cent.

Both in 1972 and in 1973 the pressure on the general price level had come largely from the side of food articles. In 1973, in addition, considerable pressure had developed in respect of raw materials. However, in 1974, the manufactures group took over the role played by raw materials in the previous year; food articles and manufactures together accounted for about 70 per cent of the increase in the wholesale Price Index. After the sharp rise in raw material prices in 1973, it was inevitable that the manufactures group should display the same tendency, though with a time lag. In fact, the trend had become visible in the latter half of 1973 itself; the upward movement in 1974 reflected not only the working of the market mechanism but also, to some extent, Government's own action in respect of administered prices.

The increase of 52.9 per cent in the Fuel, Power, etc. group in 1974 clearly reflected the steep increase in international prices of petroleum early in the year. Chemicals, machinery and transport equipment and manufactures registered price increases larger than that in the case of Food Articles. The Liqnor and Tobacco group showed a moderate rise of 18.4 per cent. It was only in the case of Industrial Raw Materials that the price rise in 1974 was less sharp than in the previous year. Lower average prices of raw jute and mesta, and a decline in prices of all important raw materials in the last quarter of the year, were responsible for this outcome. It is of interest that the indices for two groups—chemicals and machinery and transport equipment—showed a steady rise throughout the year. The manufactures group also behaved in the same fashion up to September, but this was followed by a decline, with lower prices of silk and rayon manufactures after June, 1974 and of cotton textiles after October. The corresponding intermediate goods, i.e., rayon and cotton yarn, showed a price fall—a very sharp one in the case of the former—from July and August respectively. Another important intermediate goods, viz, metals, registered a declining trend, partly as a result of international factors, after August, 1974 so that the sub-group of intermediate products as a whole showed a fall from September; the other sub-group under manufactures, namely, finished goods, followed suit two months later. The liquor and tobacco group had a brief period of stability during the July-September quarter, after which the rising trend re-asserted itself. In the fuel and power group, there was a sharp increase in the prices of petroleum products in March ; this was followed by an upward revision of coal prices with effect from April 1974. Since then, there has been only a small rise in the group index, largely attributable to higher freight rates.

The group index for industrial raw materials rose substantially between December, 1973 and September, 1974 Subsequently, there was a reversal, with raw cotton prices falling precipitately in October and November. Prices of raw jute and mesta also declineed, but this was after an appreciable rise in the preceding two months consequent on damage to the crop by floods. Oilseed prices fell from September, despite reports that the kharif crop of groundnuts would not be very satisfactory. The prices of raw hides seemed to have stabilised from July 1974 while those of raw skins fell in November. The major consumption group of Food Articles also showed a declining trend after September, 1974. Foodgrains prices fell from October, while those of edible oils showed a downtrend from September. It does not of course, follow that all foodgrains and all oils behaved in the same fashion. Thus, bajra prices increased substantially, while pulses as a whole registered a small rise because of an upward trend in the case of arhar. Among edible oils, prices of coconut oil rose in November but tended to decline thereafter.

An increase in procurement and issue prices of wheat in April, 1974, coupled with a change in the system of procurement for the second year in succession, lent further impetus to inflationary expectations. In April, 1973 takeover of the wholesale trade in wheat had been decided upon, and it had been hoped to procure as much as 8 million tonnes. With actual procurement even less than that achieved in 1972-73, the policy again underwent a change in April 1974—with traders being permitted to operate on condition that half of their purchases would be handed over to Government at the (new) procurement price of Rs. 105 per quintal. However, on account of hoarding by farmers, and attempts by unscrupulous elements to capture stocks at the village level itself, market arrivals suffered. Consequently, open market prices rose sharply at the same time that issue prices were increased to allow for the higher procurement prices payable to farmers. Also, the volume of procurement suffered a severe setback. As a result the inflationary rise in prices got strengthened.

* Economic Survey 1974-75.

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Muscle Politics as Stabilizer

Himself a mathematician J. M. Keynes discounted the values of too much mathematics in economics. In his language, "It is a great fault of symbolic pseudo-mathematical methods of formalising a system of economic analysis." For "Too large a proportion of recent "mathematical" economics are mere concoctions, as imprecise as the initial assumptions they rest on, which allow the author to lose sight of the complexities and interdependencies of the real world in a maze of pretentious and unhelpful symbols." He successfully drew out the behaviour patterns but was in much trouble to control and direct them to save the capitalist economy from the socialist challenge of growth with stability. He had seen and worked for the salvage of a rich capitalist economy leaving only some cautious words for the poor economy in the forms of "bottlenecks" in a rosy situation of high potentialty expressed by its characteristically low productive capacity and high consumption propensity. He had been shocked by 'mathematicsism' in economics and pained to propose "socialisation of investment" but had he lived to see the values of muscle politics he would have been exhilarated in studying its various aspects as a stabilizer. Uptill now its operation is confined to the poor countries ; India for instance. Muscle politics is a function of 'transfer income' (plus "imported" transfer income, in some cases at least) thrown out surreptitiously by the political parties. It follows the multiplier principle, and is being accelerated by the inducement of its real performances.

Muscle politics is feared and condemned by both nobility and gentry. This is 'irrational' as it appears to be the expression of social consciousness of the bourgeoisie. The tools of the muscle politics are the "mustans" (stout, daring, and man-killers, if need be) apparently unemployed or underemployed and are strongly inclined to no other employment (engagement) than in mustani. Investment (autonomous) of transfer income give them employment with no inducement for additional money supply or rise in costs. That is creating no ground for inflation. Had they not been thus employed they would have lived on the booty of the loots of public property and unintentionally disturbed the production and distribution of real goods of the economy

of a country. Socially then they are welcome. This dampens their reckless character. In close association with the social elite they innocently develop political consciousness as a result their employers (the political parties) lose the command over them much to their discomfort but much to the aweful acclamation of the society as a whole.

These mustans are again the guards and spearheads of democracy. Initially they are out to destroy democracy in constructing a permanent ruling structure for their employers. But sooner or later they meet their opponents in other political parties. And all then begin to name all as "fascist" (in the dark sense of it) and/or "reactionary" (for standing in opposition) and by crossing swords like two curves intersecting stand face to face in balance,—as the superpowers are now in mutual relations striking out, what is called, the 'balance of power.' Unintentionally again they propagate the values of democracy ; and in this game the communists are not excepted, although the experimental science of Marxism-Leninism-to-Stalinism-Maoism is built upon the 'fascist' ways of destructing democracy. And in this process they firmly strike the roots of democracy in the country's soil ; they themselves in turn get indoctrinated in it by constant chanting in favour of democracy. Thus the mustans. professed killers of democracy, reappear as its saviours. What a fun ! They however only follow the Fundamental Law of Nature that everything has an in-built strength to preserve itself and reappears, rectified and refined.

So far so good. But the process of the muscle politics to stabilize politics, economics and society is painful. The time that may be consumed by this process is also unpredictable ; for all depends on the psychology of the mustans and on the behaviour patterns of the social and political institutions. Things go worse when the employers of the mustans (i.e. the political parties) themselves lose all controls over them and become their targets and cause of agitation. It is then advisable that the muscle politicians should initialley give the mustans two-shift work, as political guards and as workers (in the name of keeping their muscles strong and tight) in farms and factories, feeding them with the 'transfer income'. If this can be done the economy's productive capacity will increase without tears of inflation ; the voters will be thankful both to the mustans and their employers. Eventually the mustans may lose their role but their employers will have a permanent place in the minds of the people and they themselves will reappear in a new welcome form, refined and rectified.

Monetary Management and Prices in Socialist Economy

B. Kumar

The socialist or centrally planned economies of the world comprising of communist nations of Eastern Europe and China have remained virtually immune from the inflationary germs of the free world. The economies of the socialist countries show a remarkable price stability during last one or two decades. The following table presents a picture of the price indices of socialist countries for the selected years.

Table : (Price indices in socialist countries)
(Prices=100 in preceding year)

Country	Reference year	Index of Retail prices
U.S.S.R.	1970-73	99.8
German D. R.	,,	99.6
Czechoslovakia	,,	99.5
Hungary	,,	108.6
Poland	1972	100.0
Rumania	1970-73	101.6
Yugoslavia	1973	117.0
China (base 1950, commodity prices)	1971	96 0

Source: Economic Survey of Europe 1973 (UNO) quoted in Eastern Economist 1975.

Before examining the mode and mechanism of monetary management in socialist countries it would be appropriate to have a peep into the historical perspective of socialist ideas about money. The socialist concept of money and its functions virtually run counter to the theories of classical economists who assigned a central role to money in the economic frame of competitive society based on the principle of 'laissez faire'.

Prior to Marx several socialist thinkers evolved the blue-print of a socialist society in which the place of money was relegated to an insignificant level. Robert Owen, the great visionary of 19th century, and his followers were perhaps first to emphasise "the ultimate abolition of private property", and proposed "exchage of commodities on a labour basis as intermediate measure". Robert Owen established a 'New Harmony Community' in U.S.A. where Josiah Warren tried a plan to substitute money. John Gray in his Treatise on the Principle of Exchange (1831) proposed the establishment of a bank which was to issue certificates in exchange of commodities, representing the labour time. In 1832 Robert Owen established a National Equitable Labour Exchange at London. Some more such banks were opened in other centres also. But these banks failed as "the labour time basis of valuation did not ensure an equalisation of demand and supply".

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P. J. Prodhon established the Bank of People in Paris in 1849. But like other products of revolution Prodhon's banks also collapsed due to practical difficulties.

The views of Karl Marx regarding money is not as hostile as those of earlier socialists. Marx had observed that "so far as money circulates, be it as a means of purchase or as a means of payment—no matter in which of the two spheres and independently of its functions of realising revenue or capital—the quantity of its circulating mass comes under the laws developed in discussing the simple circulation of commodity". Marx considered that "money dealing in its pure form, is thus concerned only with the technique of a certain phase of commodity circulation". However his views about money is associated with his Theory of Surplus Value as he observed, "it is equally evident that the money dealer's profit is nothing but a deduction from the surplus value". Marx gave no significant place to money in his blue-print of socialism. When Lenin came to power after 1917 revolution he abolished the institution of money from the Russian economy. But soon practical difficulties were experienced and money re-appeared with the economic reforms of 1924. However with the passage of Five Year Plans the Russian economy evolved a new pattern of monetary management which in essence is the translation of the Wicktead's concept of 'Neutral Money' which the classical and contemporary economists had abondoned as an impractical objective of monetary management.

George N. Halm has divided the views of the socialist writers concerning money into four groups :

1. The first group suggested that money be abolishhed and that necessary calculation be carried out in nature i.e. work hours, tons, kilowatts, etc.

2. The second group proposed abstract solution in the hope that its proposals could somehow be made to work in the real world.

3. The third group recommended a practical trial and error solution.

4. The fourth group suggested a practical approach "emphasising central planning at the expense of consumers sovereignty".

Although the socialists have also tried to provide an alternative to money as a means of accounting and allocation of factors they have not been able to evolve any conceptual or viable and workable alternative to money. Enrico Barno used a system of "equations to show that the ministry of production in a collectivist state would have to use all the economic categories of old regime, i.e. prices, salaries, rent, interest, profit, saving, etc."

The USSR has evolved a practical monetary system to subserve the socialist values. Under Russian system "money is an expression of socialist productive relations, it cannot become capital, but is used as the universal means of accounting and controlling the production and distribution of the social product." It is the economic instrument for planning the national economy."

In socialist economy money fulfils the function of means of circulation and as a means of payment and means of socialist accumulation and saving. Gold performs the function of world currency, i.e. international means of payment, universal purchasing medium and reserve fund. The flow of money is regulated to equate its supply with the need for exchange. Hence there is no danger of inflation, deflation or trade cycle which pervades the frame of a free economy in a cyclical order. "The amount of money required for circulation is defined as the total of the price of the commodities in circulation divided by the velocity of the circulation of money." To keep the correct balance between the aggregate prices of commodities and the amount of money in circulation the circulation of money is regulated through planning of state finances and cash and credit plans. The cash plans of the State Bank are drawn on the basis of the balance between the money income and the expenditure of the population.

The cash and credit plans of the USSR, the model for other socialist countries, are implemented through Russian Banking system which is controlled by the Finance Ministry. The Russian banking system consists of three major banks namely, the Gos bank, Stroi

Bank and the Vnesthtorg Bank. Besides there are savings banks dealings with the public.

The Gos Bank (State Bank) is the biggest banking organization of the world having about 6,000 branches and also incorporates about 78,000 savings banks. Its functions include keeping all ready monetary funds, facilitating settlement in the economy, serving as central cash reserve depot and centralisation of credit functions. The Stroi Bank is meant for financing credit capital projects. It finances capital investments of state enterprises and organisations in all fields of the economy. It functions according to the allocation made in State budgets. The Vneshtorg Bank deals with foreign payments and settlements. It regulates financial and trade relation of USSR with other countries. It is organised on the principle of joint stock company. Its shareholders consist of Gos Bank, Finance Ministry, Ministry of Foreign Trade, the State Committee of the Council of Foreign Economic Relation Ingosstrak (Foreign Insurance Operations), and Ministry of Merchant Marine. The Bank maintains correspondence relation with over 1200 foreign banks.

The relative stability of prices in the socialist countries while the rest of the world is in the inflationary flames is the fruit of the approach and policy of 'administered prices'. The prices in socialist nations are planned. The revenue of one sector is used to finance the other socially essential sectors. The "socialist states determines prices on the basis of the amount of socially necessary labour spent to produce the commodities." Luxurious goods are priced high. Some degree of free market exists in the USSR where peasants can sell the product of their private plots (i.e. kitchen gardens' surpluses) to urbanfolk. For maintaining price stability budgetary subsidies are provided and necessary imports are arranged. Prices in Soviet economy have no guiding function. Prices are "controlling and auditing device and do not have the function of equating demand and supply. Equilibrium is achieved through command and in physical terms". Economic accounting has been dispensed with at the planning stage and monetary or financial balances are used on operational level."

A brief survey of the behaviour of prices during last decade in selected socialist countries reveals the inherent strength and ability of the system of administered prices to hold price line.

USSR : Prices in the USSR have remained unchanged for the

(Continued on page 271)

Income Distribution in Relation to Farm Size and Irrigation

S. S. Miglani, Jaswant Singh Chamak, and Joginder Singh*

Lopsided economic growth is very likely to rule out the possibility of smooth development of the economy. If the economic gains do not percolate in all the sections of the society, it may become difficult to get effective participation of all sections of the society in the progressive development. The recent farm revolution in the country has undoubtedly caused overall incomes in the farm sector to increase. However, there is a controversy as to whether or not the new farm technology increased income disparities between small and large farms. Some studies have shown that green revolution gravitated more towards the larger farmers who could save more, obtain credit and invest in irrigation, land development and mechanisation, while others are of the view that small farmers are also equally benefitted. This paper seeks to examine the percentage change in the share of income among different farm size groups.

There is no denying the fact that the new technology, basically the high yielding varieties seeds and fertilizers, would not do better on areas which lack adequate irrigation facilities. The high yielding strains of crops (Mexican wheats, hybrid maize, hybrid bajra, IR8, PIR 579 paddy) need more irrigation for better results. The increased use of fertilizers further enhances the water needs of these crops. Therefore, irrigation is the most dominant factor through which the farm income is influenced. Farms with assured irrigation are likely to reap big economic gains as compared to the farms with unassured irrigation. But to what extent ? The study further aims to bring out the extent to which farms with assured irrigation have an edge of economic gains over the farms with unassured irrigation. More specifically, the objectives of the study are :—

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1. to examine the income distribution in different farm size groups ;
2. to bring out the relative changes in income among farms with assured and without assured irrigation.

Methodology

The present study was based on the data of the survey 'Economic of Farm Management—District Ferozepur Punjab'. The data pertained to the period 1967-68 through 1969-70. The sampling design of the study was of multistage random with village as primary unit and operational holding as the ultimate unit. Fifteen villages were selected with probability proportional to the cultivated area. Ten cultivators from each of the selected villages were randomly selected, thus making 150 holdings in all. These holdings were classified into five size groups, viz., below 5, 5-10, 10-15, 15-20 and above 20 hectares.

Thoughout this study, the concept of income connotes farm business income which was worked out as gross income minus costs incurred on seeds, manures, fertilizers, pesticides, human labour, bullock labour (owned and hired), running expenditure and depreciation of irrigation structures, farm machinery, implements and farm buildings, taxes and cesses, water rates and interest on working capital. These farms were further categorised on the basis of availability of irrigation. Farms irrigated by tubewells were treated as assured with respect to irrigation. Those farms irrigated by canals only (either seasonal or parennial), except for village faquarsar where canal water was not a limiting factor, were treated as with unassured irrigation.

The frequency of farms in different income groups was observed. Probit test was applied to test the log-normality of income distribution. Regression equation of the following form was fitted to the data to evaluate the relationship between probits and log X.

$$Y = a + b \log X$$

where Y = probit of percentage of farms with income X or less.

The farms of each category were classified into five groups each containing equal number of farms. The widely used Lorenz Curve technique for representing distribution of income was adopted to assess the concentration of income. Gini ratios were estimated from Lorenz Curves by using the following trapezoidal method :—

$$L = 1 - \sum_{i=1}^{N} (p_{i+1} - p_i)(q_i + q_{i+1})$$

where

p=cumulative percentage of farmers,

q =cumulative percentage of income,

N=Number of cells.

To avoid intercell and intracell bias, each observation was treated as a separate cell.

Standard errors and coefficients of variation of income for different catagories of farms were worked out and compared further to examine the relative distribution.

Results and Discussions

(a) *Farm Size and Farm Income* : The distribution of farms according to various size groups by different income levels was examined and it was found that the income had positive relationship with the size of farm in all the three years under study. It varied from Rs. 4241.98 for below 5 hectares farms to Rs. 37949.00 for the largest size group farms in 1969-70. It clearly indicated that there was a wide gap between the large and small farms in spite of the fact that all these farms had experienced an absolute increase in their incomes. Within each category of farm size group of below 5 hectares as many as 65.22, 75.00 and 57.14 per cent of the farmers earned income less than Rs. 4500.00 during 1967-68, 1968-69 and 1969-70 respectively. The maximum concentration of farms in 5-10 hectares farms was in the income groups of Rs. 3000 to 9000 per annum. However, over Rs. 9000 per annum income was earned by 59.46, 51.61 and 62.08 per cent of the 10-15 hectare size group farms during 1967-68, 1968-69 and 1969-70 respectively. During 1969-70, over one-third of the size group 15-20 hectares obtained an increase over Rs. 25000. Overall annual income of the largest farms was Rs. 34185.05, Rs. 28701.61 and Rs. 37949.00 during the respective years of inquiry. Almost all the classes of cultivators seem to have made some gains as a result of new farm technology. Nevertheless. the benefits had been in favour of large farms who had been able to explore the full potentials of the new farm technology by large capital investments in land improvement and mechanisation.

Irrigation and Farm Income

A comparative distribution of farms by income level for farms with assured irrigation and farms with unassured irrigation indicated that 29.11, 47.46 and 35.86 per cent of the farms in unassured irrigation category obtained income less than Rs. 5000 during 1967-68, 1968-69 and 1969-70 respectively. The corresponding figures in assured irrigated farms were 19.72, 30.23 and 17.89 per cent. Irrigation being the major factor responsible for the adoption of new farm technology affected the farm income. Farms with assured irrigation were towards high incomes and that of unassured irrigated farms towards low incomes.

Share of Different Quantiles in the Total Income

To view the income distribution from another angle, farm holdings were arranged in ascending order of their income. These holdings were divided into five equal segments each containing 20 per cent of the farms. The lower fifth, on an average, could account only for 6.32, 8 04, 6 63, 7.53 and 5.67 per cent of the total income of their respective categories of farms with below 5 hectares, 5-10 hectares, 10-15 hectares, 15-20 hectares, 20 and above hectares of operational holdings. The richest 20 per cent of the farms in each size group accounted for 31.96 per cent in case of farms with 15-20 hectares and 41.01 per cent in case of the highest farm sized group. This indicated that the variation of income in different farm size groups differed from each other. The analysis exhibited a general trend that the per cent share of first four segments viz., lower fifth, 2nd fifth, middle fifth and 4th fifth in each size group has been on decline over the period under study, whereas the share of the top fifth segment has increased in respect of first three size groups but decreased in case of 15-20 hectares and above 20 hectares size groups.

Similar analysis was also done for farms with and without assured irrigation. It showed peculiarity of income distribution during 1969-70. The first two segments viz., bottom fifth and 2nd fifth possessing assured irrigation sources showed an upward trend in their shares in the total income during 1969-70 over 1967-68, whereas the shares of the last three segments showed a downward trend between 1967-68 and 1969-70. Furthermore, lower fifth and upper fifth in case of farms with assured irrigation obtained 5.10 and 50.49 per cent of the total income respectively. However, in case of farms with unassured irrigation, the bottom fifth could get only 2.94 per cent and the top fifth accounted for as much as 55 92 per cent of the total income. Therefore, income distribution was much more uneven in case of farms with unassured irrigation, as compared to the farms with assured irrigation. This showed that timely water through assured sources of irrigation was important in the context of new farm technology to reduce income variability.

Probit Analysis and Farm Income Inequality

The results of probit analysis are presented in table 1. It is evident from this table that the values of coefficients of determination (R^2) for all the farm size groups and farms with and without assured irrigation, in all the three years under study, came out to be highly significant at .01 probability level. This exhibited a good fit for linear relationship between the probits of cumulated proportions of farms and the incomes in terms of logarithms which indicated the existence of lognormal distribution of income.

Gini used the value of 'b' as a direct measure of inequality. He suggested that for the upper part of the distribution, higher values of 'b' correspond with greater inequality, while for the lower part of the distribution, higher values of 'b' imply less inequality. In this study, the values of regression coefficients turned out to be less in magnitude for both the lowest and the highest farm size groups in all the three years. This implied that for the size group of 20 hectares and above, there was less income disparity and for the farm size group of below 5 hectares a greater income inequality was the outcome.

Lorenz-Gini Ratios and Farm Income Inequality

Gini ratios worked out from Lorenz Curves were maximum in case of largest farm size group during 1967-68 and 1968-69 which showed maximum farm income disparity in this category. However, during 1969-70, farms with 10-15 hectares showed greatest inequality as compared to other farm size groups. Highest degree of equality was noted in case of farms with 15-20 hectares as the operational holdings.

Farms with assured irrigation observed higher Gini ratio during 1967-68 and 1968-69 but it was lower during 1969-70 as compared to the farms with unassured irrigation.

Coefficient of Variation and Farm Income Inequality

Average farm business income in case of farms with less than 5 hectares, 5-10 hectares, 10-15 hectares, 15-20 hectares, and 20 hectares and above Rs. 4[illegible]41.98 ± 589.06, Rs. 8177.09 ± 717.494, Rs. 12089.78 ± 1428.17, Rs. 18484.65 ± 1691.08 and Rs. 37949.00 ± 5614.24 respectively during 1969-70. This showed positive effect of farm size

Table 1

Probit Regression Functions for Different Farm Groups and Farms with and without Assured Irrigation (1967-68 through 1969-70)

Farm Size Groups (IN hectares) and irrigation categories	……Farm Business Income per Farm Probit=a+b (log x)……					
	……1967-68……		……1968-69……		……1969-70……	
	Probit Reg. Equation	R^2	Probit Reg. Equation	R^2	Probit Reg. Equation	R^2
Below 5 A	Probit=— 2.7820+2.2205 (log x)	0.6989*	Probit=—3.9634+2.6545 (log x)	0.9237*	Probit=—4.0414+2.5888 (log x)	0.9301*
5-10 B	Probit=—11.5747+4.3421 (log x)	0.8298*	Probit=—103919+4.1548 (log x)	0.9992*	Probit=—7.1451+3.1851 (log x)	0.9295*
10-15 C	Probit=— 9 6761+3.6935 (log x)	0.9433*	Probit=—0.6982+1.5291 (log x)	0.7916*	Probit=—9.5110+3.6437 (log x)	0.9881*
15-20 D	Probit=— 5.5377+2.4994 (log x)	0.6406*	Probit=—8.0772+3.1951 (log x)	0.9288*	Probit=—7.8964+3.0804 (log x)	9.8862*
20 and above E	Probit=— 6.7482+2.6629 (log x)	0.9072*	Probit=—5.9185+2.5415 (log x)	0.9519*	Probit=—6.4915+2.5946 (log x)	0.8991*
Farms with assured irrigation	Probit=— 4.9617+2.4847 (log x)	0.9910*	Probit=—2.7002+1.9972 (log x)	0.9019*	Probit=—6.0640+2.7732 (log x)	0.9820*
Farms without assured irrigation	Probit=— 4.7477+2.5003 (log x)	0.9216*	Probit=—4.0675+2.4193 (log x)	0.9794*	Probit=—2.8833+2.0346 (log x)	0.9858*

* Significant at 1 per cent level.

on farm income. The relative lower income during 1968-69 was due to bad weather. In case of farm group 15-20 hectares, the coefficient variation was the minimum and it turned out to be maximum in 20 hectares and above farms. It was further noted that coefficient of variation was the minimum during 1967-68 because of normal weather throughout.

For farms with and without assured irrigation, average farm income was Rs. 14066.30±1427.77 and Rs. 13370.46±2076.23 respectively during 1969-70. The coefficient of variation was comparatively higher in farms with unassured irrigation during 1969-70 because of uncertainty of water availability resulting in fluctuations in farm income.

To conclude, it was evident from various techniques applied to measure the income disparity that the farm business income mainly depended upon the size of operational holding. It was, however, interesting to note that farms of 15-20 hectares showed the minimum inequality in farm incomes over all other farm size groups, farms with assured irrigation had an edge of economic gains over those with unassured irrigation.

SUMMARY

Evidently, the recent technological developments in Indian agriculture have increased the absolute farm incomes. It is however, contentious to examine to what extent the increase in incomes has been skewed towards some categories of farms.

The data pertained to the project, 'Economics of Farm Management—District Ferozepur (Punjab)' for three consecutive years i.e. 1967-68 through 1969-70. There was a wide gap between different size group farms with respect to the farm business income. It varied from Rs. 4241.98 below 5 hectare farms to Rs. 37949.00 in case of the largest size group farms in 1969-70 showing as much as a nine-fold gap of income level between these two size groups.

The income inequality within each farm size group was also examined. In case of farms of 15-20 hectares, the income disparity was ths least and it was the maximum in case of 20 hectares and above farm size group. These results were supported by working out quantiles' share ratios and the coefficients of variation.

The income inequalities between the farms with and without irrigation were also examined. The study brought out that farmers having assured water supply on their farms earned higher farm business income as compared to the farmers having unassured irrigation. Farms with assured irrigation had the highest income disparity during the first two years of study while the coefficient of variation turned out to be higher on farms with unassured irrigation during 1969-70.

Policy Implications

The study has two major policy implications which are discussed below :

The class-interval for different farm size groups was kept at 5 hectares. The farm category with 20 hectares and above had comparatively wider range of farm size. Therefore, income disparity within this group was likely to be more and was also supported by this study. Farm size group with the range of 15-20 hectares (operational holdings) showed the least income inequality. Therefore, this could be considered as a model group owing to its constant return to land input factor. From this, it could be asserted that land ceillings within the range of 15-20 hectares would be the most desirable in Punjab. Any other measure based on political considerations would be deterimental to the interests of the farmers' community. Secondly, the study brought out that the farmers having assured water supply at their disposal earned higher farm income as compared to those suffering from lack of assured irrigation. Gap of income inequality within the farms having assured irrigation got narrowed, but it was widened in case of farms without assured irrigation, over the period under study. It, therefore, suggests that special provisions for adequate irrigation facilities to the farmers become pertinent not only for enhancing their farm income but also for building up infra-structure on their farms, which is a prerequisite of the proper adoption of modern farm technology.

Response of Farmers to Prices —The Case of Potato and Groundnut in Punjab

D. S. Sidhu and Parkash Mehta*

Although there are considerable improvements in the methodology of examining the farmer's responsiveness to various factors, yet difficulties do exist in measuring the degree of responsiveness of producers to price changes in precise terms. Absence of anything resembling *ceteris paribus* in the theoretical formulation in economics in the real world situation, is a basic problem.[1] The farmers' decision to raise a crop in any season may be influenced by a complex group of factors such as consumption needs, weather conditions at sowing time, prices of competing crops, requirements of crop rotation, etc. The price response of farmers who mainly produce for the home consumption will be different from those who produce for the market or exports.[2]

In the developed economies, the farmers do take business risks and depend upon market outlook service in planning different levels of farm enterprises ; objective being maximization of farm returns. In developing economies no such market outlook service is available and farmers have to depend upon their own experiences—on the price trends of the past years.

Supply functions usually are predictive in nature rather than prescriptive. They predict the functional relationship between the price of a product and the output expected to be forthcoming assuming a given technological and economic environment. Predictive functions are relevant in situations where producers are free to make choices

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[1] V. M. Jakhade and N. A. Majumdar, Dec. 1964, "Response of Agricultural Prices—The Case of Jute and Rice in India", Ind.Jr. Agril. Econ. 19 (3 & 4) : 204.

[2] Raj Krishna, 1963, "Farm Supply Response in India—Pakistan : A Case Study of the Punjab Region", Econ. Journal, 53(291) 477.

about what they produce and where price increases are used as incentives to cause increase in production.[3]

A number of investigations have been conducted to study the farmers' response to prices in so far as the allocation of available acreage to different crops is concerned. It appears from the review of the available literature that quite a few isolated projects had been taken up in the Punjab State with a view to examining the supply response of certain selected crops. In the recent past, no detailed and comparative study of supply response of farmers growing potato and groundnut in Punjab has been conducted. There being differences in these two enterprises in terms of quality, prices, demand, yields and input costs. Behaviour of the farmers growing these two crops, in regard to economic incentives and disincentives, cannot be anticipated on the basis of studies conducted in other regions and for other crops. Therefore, in the present study, besides the influence of prices or relative prices, response to other factors was also examined. The specific objective of this study was to study short-run and long-run price elasticities of potato and groundnut in relation to their hectarage allocation.

Nerlove[4] worked on the role that farmers' expectations of future relative prices play in shaping their decisions as to how many acres to devote to each crop. Expected prices are represented by a weighted moving average of past prices. The model used by him was :

(1) $P^*_t - P^*_{t-} = \beta(P_{t-1} I^*_{t-1})$; where $0 \leqslant B$

(2) The expected price $P^*_t = BP_{t-1} + (1-B)\,BP_{t-2} + (1-B)^2\,BP_{t-3} + \dots$

From the estimation (2) he obtained (3)

(3) $X_t = \pi_0 + \pi_1 P_{t-1} + \pi_2 X_{t-1} + V_t$;

where X_t was acreage at time t ;

P_t was price at time t,

B = coefficient of expectation

$\pi_0 = a_0 B$, $\pi_1 = a_1 B$; $\pi_2 = (1-B)$; $V_t = BU_t$

U_t was random residual.

[3] J. A. Seagraves (1970), "Agricultural Production and Supply Response Research : A Review for Project Planners in Developing Countries", International Bank for Reconstruction and Development, Economics Deptt, Working Paper No. 57 P.3.

[4] M. Nerlove, (1956), "Estimates of Supply of Selected Agricultural Commodities", J. Fm, Econ, 38 (1), 495-508.

Nerlove[5] discussed the difficulties in estimating long-run and short-run elasticities. He discussed the differences between long-run and short-run and the problem of uncertainty and distributed lags in formulating farmers decisions. He gave his adjustment model for estimating supply response which was used in the following model :[6]

(4) $X=ar+b_rP_{t-1}+C_{rt}+(1-r)X_{t-1}+U_t$

to estimate the long-run elasticities,

r, the coefficient of adjustment, determines the relation among the short-run and long-run elasticity. This can be obtained by subtracting statistically determined coefficient of X_{t-1} in the equation (3) from one. By dividing the coefficient of price by the estimates of r, long-run price elasticity is obtained.

Methodology

The study was based on 21 years' time-series data from 1950-51 to 1970-71 (agricultural years), for the State of Punjab, for both potato and groundnut.

The data regarding area, production, yield, price of the crops selected and their substitute crops, rainfall etc. were obtained from secondary sources. The average rainfall in the State has been calculated by adding the averages of the rainfall data for each district of the State.

The Model

The commonly used certainty-equivalence model in supply response analysis, based on time-series data is the adoptive expectations model developed by Nerlove,[7] which in the simplest form, is based on the relation :

(5) $A_t - a+bP_{t-1}+U_t$

(6) $A_t-A_{t-1}=B(A^*_t-A_{t-1})\ 0 < B < 1$

Where, A^*_t is long run equilibrium acreage under the crop in year t and B is the coefficient of adjustment, its value ranging between zero and one. The above formulation yields an estimating equation of the following form :

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[5] M. Nerlove (1958), "Distributed Lags and Estimation of Long-run Supply and Demand Elasticities", J. Fm. Econ. 40(2) : 301—310.

[6] M. Nerlove and W. Addison (1958), "Statistical Estimation of Long-run Elastisity for Hogs", J. Fm. Econ. 40 (4) : 845—860.

[7] M. Nerlove (1958) : Dynamics of Supply. John Hopkins Press, Baltimore, U.S.A.

$$(7)\quad \text{Log } A_t = \log a_0 + a_1 \text{ Log } P_{t-1} + a_2 \text{ Log } A_{t-1} + \text{Log } V_t$$

The value of B is given by $1 - a_2$. The short-run and long-run supply elasticities are given by a_1 and $\frac{a^1}{B}$ respectively.

The dynamic supply response model, incorporating risk-aversion hypothesis, is based on three structural equations :

$$(8)\quad A^*_t = a^0 + a_1 P^*_t + a_2 C.V.\, P_t + U_t$$

$$(9)\quad (A_t - A_{t-1}) = b_0 + b_1(A^*_t - A_{t-1}) + e_t$$

$$(10)\quad (P^*_t - P^*_{t-1}) = C_0 + C_1(P_{t-1} - P^*_{t-1}) + V_t$$

The response functions have been fitted for the State. In each model total hectarage under potato and groundnut has been taken as the dependent variable respectively in respective models. Wheat was considered as substitute crop for potato and maize and rice crops have been considered for groundnut crop. The basic functional relation considered was :

$$(11)\quad A_{it} = f(A_{it-1}, P_{it-1}, P_{jt-1}, P_{rt-1}, C.V.P_{it-1}, C.V.P_{rt-1})$$

Where

A_{it} = Area under potato or groundnut crop in hectares.

A_{it-1} = Area under potato or groundnut in hectares, lagged by one year.

P_{it-1} = Absolute harvest-price of main potato or groundnut crop, lagged by one year.

P_{jt-1} = Harvest price of substitute crop for the corresponding year in case of potato. But in case of groundnut, lagged price of maize was considered for analysis.

P_{rt-1} = Relative returns, lagged, and was worked cut as follows :

$$\frac{P_{it-1} \cdot Y_{it-1}}{P_{jt-1} \cdot Y_{jt-1}}$$

$C.V.P_{it-1}$ = Coefficient of variance of wholesale price of respective crops, lagged by one year.

$C.V.P_{rt-1}$ = Coefficient of variance of relative returns, lagged.

Hectarage was considered as a proxy for production response of farmers. It was assumed that production is directly related with hectarage under a crop.

Cobb-Douglas function was tried for both the enterprises—potato and groundnut. The variables used were tested for multicollinearity*.

Results and Discussion

The finally selected equations are given in Table I.

I. Potato

Equation 4 given in Table I indicated that relative returns do not exercise a significant influence on hectarage, though the coefficient bears the correct sign. Absolute prices, however, were significant in determining hectarage. But the degree of significance varied in different equations. The inclusion of coefficient of variation ($C.V.P_{it-1}$) of absolute prices over the last three preceding production periods, as measure of price risk, did not improve R^2, and the relevant coefficient was not significant.

The $C.V.P_{it-1}$ coefficient bears the correct sign suggesting farmers' averseness to variability in potato prices.

The estimates of short and long run elasticities with respect to absolute price varied between 0.131 and 0.834. It was lowest (0.0385) with respect to relative returns. When the acreage response was considered as dependent upon the absolute price, the short-run price elasticity turned out to be much higher (0.834) and was significant at 1% level. This clearly indicates that the precise or best specification of price expectation needs more detailed evaluation. This is also clear by the instability of the coefficient of adjustment through equations (1) and (5).

The elasticity with respect to CPV_{it-1} indicates the influence of this variable on hectarage. While the estimates are not significant, the negative sign indicates that large variations in prices do have an adverse impact on acreage.

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* The following criterion were used to test the multicollinearity :

(a) The correlation coefficient between a pair of independent variables was considered as high, if it was greater than, 0.8 (Heady & Dillon, 1961).

(b) Multicollinearity is not necessarily a problem unless it is high relative to the overall degree of multiple correlation among all variables simultaneously. Or, more specifically if 'r' is zero-order correlation between two independent variables and R is the multiple correlation between dependent and independent variables, multicollinearity is said to be serious if $r \geqslant R$ (Klein, 1969).

Table 1

Hectarage Response Equations for Potato and Groundnut, Punjab, 1950-51 through 1970-71

Crop Equation Number	P_{rt-1}	A_{it-1}	P_{it-1}	P_{jt-1}	CVP_{it-1}	CVP_{ir}	R^{2*}	Constant
Potato								
1		0.826314‡	0.148700†	—0.160619			0.957529‡	—0.305504‡
2		0.788663‡	0.171796†	—0.189638	—0.022588		0.958016‡	—0.383049‡
3		0.905270‡	0.134940		—0.003928		0.955387‡	—0.092305‡
4	0.038469	0.956151‡	—			—0.003807	0 952981‡	0.037198‡
5		0.909213‡	0.131465				0.955370‡	—0.085726‡
6		—	0.833872‡				0.435534‡	—0.379651‡
Groundnut								
1		0.981631‡	0.071696	—0.231050			0.951749‡	0.185625‡
2		0.984093‡	0.964815	—0.222098	—0.021404		0.958299‡	0.155141‡
3		0.983502‡	0.036152†		—0.026994		0 949827‡	0.020076
4	0.159582†	0.973796‡	—			—0.044884	0.956167‡	0.099024‡
5		0.977251‡	0.031907†				0.949263‡	0.051991‡
6		—	0.969868‡				0.660080‡	0.236036‡

‡ Significant at 1 per cent level of significance.

† Significant at 5 per cent level of significance.

R^2 was tested for significance as under :

$F=\frac{R^2}{-R^2}, \frac{N-K-1}{K}$ at K and N—K—1 degrees of freedom.

N=Total number of observations,

K=Number of explanatory variables.

II. Groundnut

The response functions for groundnut show that the elasticity of absolute price was significant in three equations out of five. The coefficient of relative returns was also significant at 10 per cent level. This shows that the growers of this enterprise take into consideration returns from competing crops also while planning acreage. The lagged acreage in all the equations was significant at one per cent level. The elasticity estimates presented in Table 2 suggest the positive influence of price but the magnitude varied wide. It was 0.970 when only absolute price was taken as independent variable. When absolute price was considered along with other variables its value varied from 0.0319 to 0.1596. The coefficient of adjustment obtained in this enterprise from the five equations had low values, thereby suggesting the existence of rigidities which inhibit speedy adjustments in the long-run. One of the main obstacles in adjustments is the favourable soil-climatic conditions. Only parts of Ludhiana, Kapurthala, Sangrur and Patiala districts had favourable soil and climate for the growth of groundnut enterprise This binds the expansion of hectarage. Groundnut hectarage could not be expanded beyond some pockets of the above mentioned districts. The long-run elasticity had a very high value in this enterprise. The long-run price variability coefficient was also high, showing thereby that large variation in prices has a more adverse impact on hectarage then it was in the case of potato.

The results of present study have some implications for price policy. One of the major inferences that could be drawn is that the farmers did not compare the relative returns while planning for potato. The own absolute price is important decision-maker. But, when the price of competing crop is also considered, this improved the fit, showing that the farmers allocated the hectarage under potato by observing the harvest period price of wheat crop. This necessitates the announcement of wheat prices well in advance and also for a number of years, so that uncertainty regarding wheat prices does not hamper rational hectarage allocation decisions of the farmers. This will also help in stoppage of unnecessary shifts in cropping pattern.

In case of groundnut, the relative returns turned out to be significant thereby showing that the farmers take into consideration the returns which they expect from competing crop. The absolute prices of competing crop did not influence the allocation of hectarage of groundnut growers.

Table 2

Estimates of Short and Long-run Elasticities

Crop Equation Number	Coefficient of Adjustment	Elasticity with respect to price @		Elasticity with respect to price variability	
		Short run	Long run	Short run	Long run
Potato					
1.	.173686	.148700**	.856143	—	
2.	.211337	.171796**	.812901	—.022588	—1.068814
3.	.094730	.134940	1.424470	—.003928	—0.414652
4.a	.043849	.038469	.877306	—.003807	—0.868207
5.	·090787	.131465	1.448060		
6.		.833872***			
Groundnut					
1.	.018369	.071696	3.903098		
2.	.015907	.064815	4.074621	—0.021404	—1.345571
3.	.016498	.036152**	2.191296	—0.026994	—1.636198
4.a	.026204	.159582**	6.089986	—0.044884	—1.712868
5.	.022749	.031907**	1.402567		
6.		.969863***			

a = Relative Returns

*** = Significant at 1 per cent level of significance.

** = Significant at 5 per cent level of significance.

@ = 't' Test was used to observe the significance of the elasticities of independent variables as below :

$$t = \frac{\text{Elasticity of } X_i}{\sqrt{\text{Vari. Elasticity}}} : \text{at N-K-I degrees of freedom.}$$

$$\text{Vari. Elasticity} = \frac{\text{Vari. } b_i}{(\bar{Y}/\bar{X}_i)^2}$$

The adjusment coefficients of these two crops suggest that there is less scope for adjustment in case of groundnut as compared to potato. And this is in confirmation with the actual field situation. The soil-agro-climate complex of Punjab State does not allow wider adoption of groundnut crop.

The Finnish Market : A Comparative Analysis

Bo Backman and James Sood*

Finland has been ignored as a significant market in the historical trends of international trade. For over six hundred years Finland was part of the Kingdom of Sweden. From 1809 to 1917, it was a Grand Duchy of Russia. In both roles, Finland was given varying degrees of autonomy ; however, the country was treated economically and politically as a colony rather than as a sovereign nation. Sweden and Russia, the neighbors and alternating rulers of Finland, were involved in a series of prolonged conflicts during this time. These wars, which totaled over sixty years in duration, were fought predominantly on Finnish soil at tragic expense to the Finnish people. The communist revolution in Russia provided the opportunity for Finland to declare its independence and, after a bitter civil war, the country was able to secure its national sovereignty for the first time in 1918.[1]

In recent years, however, the business scene in Finland has developed rapidly. One apparent reason for this is that Helsinki and Finland represent the most logical gateway for the Western countries to the potential market of the Soviet Union. At the same time, the growing market in Finland has also begun to have an influence on the increasing business activity.

Research Objectives and Methodology

The primary objectives of this study is to develop a comparative analysis of the market in Finland in a manner that would be most meaningful to the potentially interested businessman. The market in the United States was selected as the subject for comparison because of the nationalities and experiences of the authors of this research. In order to provide a framework for the analysis of these two markets,

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the comparative management matrix of Professors Richard N. Farmer and Barry M. Richman was utilised. A secondary objective of the study is to evaluate the effectiveness of the Farmer-Richman matrix in a practical analytical business study. The field of comparative analysis has reached the point where it must develop meaningful concepts that can be applied effectively in the world of making policies and decisions. It is intended that this research will provide a reasonable evaluation of one of the presently accepted concepts of comparative analysis.

The approach of the study is to compare the environmental variables in Finland to those of the United States. An alternative to the methodology of the Farmer-Richman concept was utilized in this research. The weights and values of the variables represent the subjective consensus of the authors rather than the results of the Delphi Technique. The advantages and disadvantages of this alternative method of measurement are discussed later in the study. While the difference in the magnitude of these markets makes this analysis difficult, the relative changes from 1962 to 1973 contribute to the objectives of the study. The former date was selected because the most significant market changes have occurred since that time, and because one of the most recent studies of marketing in Finland was conducted in 1962.[3] This study is not intended to be an in-depth analysis of any of the areas covered but rather a reasonably complete overview of the market in Finland.

The Comparative Analysis

The initial aspect of the analysis is the description and measurement of the environmental variables that have an influence on marketing in the two countries under study. For the purpose of brevity, the general subject heading of each variable is shown. A more complete description of these environmental constraints is listed in the orignal work of Professors Farmer and Richman.[8]

The number of people in Finland has remained relatively stable, increasing from 4.5 to 4.6 million during the period under study. This contributed to the per capita increase of almost threefold during this time, from $1182 to $3358. The population in the United States meanwhile increased from 186.5 to 211.1 million, and the per capita income went from $2885 to $6106. Although the population in Finland experienced little growth, there was a decided shift from rural to urban. In 1962, approximately two-thirds of the population lived in rural areas, but this has changed to about one-half in 1973, despite attempts by the government to counter this movement. Helsinki and its suburbs have been the principal recipients of the population movement, increasing by 40% to approximately 700,000 people in 1973. The United States, in a more advanced industrialized stage, has only experienced a change from about 30% to 27% during this same time frame.

Economic Variables

Economic Constraint	Weight	Finland	U.S.
1. General economic framework	40	30	32
2. Central banking system and	20	16	15
monetary policy effectiveness	20	15	14
3. Fiscal policy effectiveness	20	15	14
4. Economic stability	40	28	32
5. Organization of capital markets	30	22	28
6. Factor endowment	40	26	38
7. Market Size	25	15	24
8. Social overhead capital and external economies	35	30	32
	250	182	215

The total number of people employed in Finland increased by about 10.5% while the number of people employed in the U.S. increased by 13.3%, which was about equal to the population growth in the U.S.

There is a considerably more even distribution of income in Finland than in the United States although the overall tax rates are only about 10% higher, when all various forms of taxation are considered. Perhaps this is due to the relatively consistent taxation policies and procedures in Finland. This is illustrated by the fact that each city and town publishes an annual listing of each resident's total income and income taxes paid for that year.

In terms of national ownership of industry, Finland is only slightly more socialistic than the United States although it is generally believed to be much more so. In the critical area of land development, the Government of Finland does exercise a much greater degree of planning and control than the U S. does.

While the Finnish market is considerably smaller, its growth during the last few years has made it reasonably attractive for many consumer and industrial products. The rising income level, the relatively even income distribution, and an unusually high propensity to spend have contributed to the dynamics of the consumer market. The war reparations to the Soviet Union and the desire to diversify its industry from wood and wood products have led to the emergence of a strong and viable manufacturing sector. This growth has resulted in an increasingly attractive industrial market.

Another factor that should be considered when evaluating the magnitude of the Finnish market is the relationship between Finland and the Soviet Union. Whether through choice or circumstance, the Finns have developed the ability to negotiate and trade with the Russians perhaps as well, if not better, than most others. In recent years, Finnish trade with the Soviet Union has covered the spectrum from exports of consumer and industrial goods to construction contracts and complete turnkey operations. The experience of the Finnish business and government people and their existing relationships with the Russians could well influence the evaluation of the size of the Finnish market for a company interested in developing trade with the Soviet Union.

The Finnish Government does provide support to its exports trade in the form of credits and insurance, but these efforts are quite similar to comparable programs in the United States. The Institute of Exports in Helsinki is quite unusual, however. The school, supported by government and industry, selects about twenty-five young, promising candidates from industry each year. These students study an intensive program in export marketing for one full year. In the second year, the majority of the students work as assistant commercial attaches in Finnish Embassies throughout the world. At the conclusion of this training, they return to the marketing departments of their original companies.

Most of the marketing research for foreign markets is centralized in the Finnish Foreign Trade Association. The efforts of this organization, which again is funded by industry and government, is roughly comparable to the recent marketing research efforts of the U.S. Department of Commerce. However, because of its composition and support, this organization enjoys a much closer working relationship with industry.

In recent years inflation has become a serious problem in Finland, as it has in most countries. After a period of relative price stability, the consumer price index increased by 12% during 1972, about 15% in 1973, and approximately 25% last year. Because foreign trade is such a significant part of the economy, a considerable amount of this inflation has been imported. It is a tribute to the people of Finland that they agreed to negotiate all of the labor contracts at the same time this past spring. In the face of this increasing inflation, labor contracts were agreed to hold the wage increases to about 6% annually, on the average. Perhaps the critical difference is that the Goverment informed the people that their standard of living was going to be lower for the foreseeable future. This honesty, characteristic of the Finns, and the relatively more equal income distribution, has contributed substantially to the support of the Government and the national unity of the people during the present economic crisis.

This leads the discussion to the question of oil. Finland has to import virtually all of its energy needs. Approximately two-thirds of the oil and natural gas requirements are purchased from the U.S.S.R. These purchases are primarily on the basis of bilateral barter agreements. It is an over-simplification, but as the world price of oil increases fourfold, Finland must increase its exports to the Soviet Union by about the same amount to pay for the oil. While this arrangement is appreciably better from the aspect of the balance of payments than the oil importing situations of most other countries, it does increase Finland's economic dependence on the Soviet Union.

Table 1

Comparison of Economic Variables : Finland and the U.S.

		1962	1973	%Change
Population :	Finland	4.5 million	4.6 million	2.2%
	U.S.	186.5 „	211.1 „	13.2
GNP/capita :	Finland	$1182	$3358	134%
	U.S.	$2885	$6106	112
% Rural :	Finland	65%	45%	(−)31%
	U.S.	30%	27%	(−)10%
Employment :	Finland	1.9 million	2.1 million	10.5%
	U.S.	74.5 „	84.4 „	13.3
Trade with West :	Finland	80%	84%	4%
	U.S.	99+%	97%	(−)2%
Total Exports :	Finland	$960 million	$3,970 million	314%
	U.S.	$21,700 „	$70,255 „	224%
Total Imports :	Finland	$1,067 million	$4,510 million	323%
	U.S.	$16,378 „	$69,567 „	325%
Total Trade/GNP :	Finland	38.1%	54.9%	44%
	U.S.	7.1%	10.9%	54%

Table 1 (Contd.)

		1962	1973	%Change
Consumer Price	Finland	100	195.8	95.8%
Index :	U S.	100	109.0	49.0%

Sources :

Finland—Statistical Yearbook of Finland, Central Statistical Office, Helsinki, 1972 and Finnish Desk of International Bank for Reconstruction and Development, October 18, 1974,

U.S. —Various Issues of Survey of Current Business, U.S. Department of Commerce, Bureau of the Census, Washington, D. C. : Government Printing Office.

Political and Legal Variables

	Political and Legal Constraint	Weight	Finland	U.S
1.	Relevant legal rules of the game	80	70	65
2	Defense and military policy	20	16	15
3.	Foreign policy	25	20	15
4.	Political stability	80	72	75
5.	Political organization	25	18	16
6.	Flexibility of law and legal charges	20	15	15
		250	211	201

Although there are a number of active political parties in Finland, essentially they fall into two main groups—socialists and conservatives. Historically, there has been a fairly even split between these two groups. One important difference is that the communist party is legal in Finland and, over the years, has usually obtained one quarter of the popular vote. With most of the employed people represented by one collective organization or another, the fact that most of these unions have socialist/communist majorities could be more than a little disturbing. However, this is not believed to be a major problem since almost all Finns consider themselves to be Finns first, with political affiliation second.

The most important political characteristic of Finland is its decided and determined neutrality in the ideological conflict between the East and West. While its size and geographic position more or less dictate a policy of this nature, there are considerable economic advantages to this strict neutral posture. One advantage is that most of the developing nations have a deep respect and admiration for Finland. These feelings have led, in a number of cases, to favorable trade and investment opportunities for Finland. Another example is that Finland is a member of COMECON and also an associate member of the EEC. This dual membership broadens Finland's marketing potential in Europe. The latter situation was negotiated over a lengthy period because of the concern of the Soviet Union. The U.S.S.R. finally gave its approval to this move when the Government of Finland agreed to extend the term of President Kekkonen by six years.

The legal framework for business in Finland is essentially quite similar to that in the United States, although the legal system is based on code law rather than common law. An important note in this connection is the generel acceptance of law in Finland. It is not an exaggeration to state that the people of Finland are unusually law abiding ; much more so than people in most countries. This is illustrated by the very low crime rates and the absence of organized crime.

Sociological and Cultural Variables

Variable	Weight	Finland	U.S
1. Attitude toward industrial managers and management :	30	26	24
2. View of authority and subordinates :	10	8	8
3. Interorganizational cooperation :	20	16	14
4. Attitude toward achievement and work	70	56	58
5. Class structure and individual mobility :	20	15	17
6. Attitude toward wealth and material gain :	10	7	8
7. Attitude toward scientific method :	50	38	42
8. Attitude toward risk taking :	20	16	14
9. Attitude toward change :	20	14	16
	250	196	201

Based on the measurement of these constraints, there do not appear to be any significant sociological and cultural differences between Finland and the United States. One important variable, language, is not mentioned in this framework, however. The Finnish language is so completely different from any of the more widely used languages that it has been a major factor in the relative isolation of the country. To overcome the limitations caused by their language, training in other languages has become increasingly important. Of the foreign languages studied, English has been the predominant choice in recent years. The reason for this is that English is the second language in many neighboring countries, and could even be called the international business language of Europe.

The Finnish people can be characterized as honest, determined, quiet and reserved, with an extraordinary lack of confidence. They attempt to overcome this latter trait by perseverance and determination. It is not an accident that Finland is famous for long distance runners such as Paavo Nurmi, since the qualities necessary for success in long distance running would appear to be national characteristics. The extreme lack of confidence is difficult to analyze since the country has achieved a remarkable success by any measure, considering its difficult history and limited resources. Perhaps this history, or the fact that the Finns constantly compare themselves to the most successful countries, helps to explain this lack of confidence. Nevertheless, this attitude pervades and has a direct bearing on every business or social situation. Obviously, as one author has noted, when these personality traits are carried to the extreme they can develop into tactlessness, dogmatism, and extreme sensitivity.[4] This is the exception rather than the rule, and conducting business in Finland is invariably a pleasant experience.

The population of Finland is exceedingly homogeneous in terms of race and religion when compared to the United States. One exception is the minority of Finns of Swedish ancestry. Although they are only seven to eight per cent of the population, they have owned a disproportionate share of the business and property and, as a result, have held the better positions in industry and the professions. This situation has been improving since the country obtained its independence, however, and there is now considerably less strain between the two groups. In order to allow the Swedish Finns to maintain their cultural heritage, the Government declared two national languages—Finnish and Swedish. An indication of the effect of this is that each street, district, and town has its name shown in both languages.

The business philosophy in Finland differs from the United States in a few critical ways. Although the economy is basically a free market system, the business objective of most Finnish companies differs markedly from their American counterparts because maximizing profits is not usually the primary goal. One of the reasons for this is the lack of a broad, accepted and active stock market. While there is a stock market in Helsinki which lists various stock and bond issues of approximately 65 companies in Finland, there had been relatively little interest in this market in the past. Consequently, most companies have ignored the sal of common stock as a substantial source of external capital for expansion. Since the traditional means of raising capital has been by various types of short and long term borrowings, management has concluded that there is little incentive to show increased earnings per share. This, of course, feeds upon itself and makes the shares even less attractive to the potential investor. The second factor that influences company objectives is the national income tax which is approximately 60% for a limited liability company and about 70% for a partnership. Thus, the businessman is motivated to operate the company at a level of optimum loss, since the company would still have to pay taxes in a breakeven situation because of various adjustments that are required to be made to the final income and expense figures.

The major accounting difference in Finland is that up to 50% of the value of a company's inventory at the end of the fiscal year can be deducted from the taxable income of the company. This encourages management to increase sales and market share in order to use up the large inventories that were allowed to accumulate in order to reduce taxes. Increasing the value of the inventory also tends to increase the borrowing power of the company by changing the nature of its assets. In addition to directing industry toward sales growth, this policy also encourages growth by acquisition. A number of Finnish industries are fragmented into many small firms. By these policies the Government is apparently attempting to force a greater degree of industry concentration in order to increase the nation's ability to compete in foreign markets. In the last few years the Government has also taken steps to build up the equity market in Finland as a viable alternative to debt financing. These steps consist of limiting to 20% the amount of interest that can be a deductible expense, and conversely allowing a large portion of declared stock dividends to be considered as deductible expense in calculating corporate income taxes.

The general acceptance of business and business as a profession is roughly the same as in the United States. People at all levels appear to be more conscientious about their work. Although the pace of work and living is slower, and the work day is usually concluded at 4.00 p m., the productive effort is about equal to that in the U.S.

This may be because they spend little time preparing memos and engaging in conversation.

Educational-Cultural Variables

Variable	Weight	Finland	U.S.
1. Literacy level	100	95	95
2. Specialized vocational and technical training and general secondary education	25	20	18
3. Higher education	50	32	38
4. Specialized development programs	25	20	22
5. Attitude toward education	25	22	24
6. Educational match with requirements	25	22	20
	250	211	217

The educational system in Finland is presently undergoing dramatic and controversial changes. Previously, the student advanced as far as his abilities allowed, based on competitive examinations. One of the advantages of this system is that it spun off people at varying levels. These people could then continue with vocational training or assume less demanding jobs in the economy. To enter the university level in Finland also requires a satisfactory score on competitive examinations. Each school has a certain number of openings each year which are filled solely on the basis of the highest test scores. Wealth and position have virtually no influence in this selection. This objective process is quite characteristic of the Finnish attitude toward advancement.

In striking contrast to this, a new system has recently been introduced by the Minister of Education. This system, which will initially be implemented in the beginning grades, will ensure that all students, regardless of performance, can complete the first eight years of school. It is intended that this concept will eventually be extended to succeedingly higher levels of education. While this change, which is very controversial throughout Finland, is modeled after the system in Sweden, it is not too different from the educational system in the United States in many respects.

Conclusion

The primary objective of this study is to develop a comparative analysis of the markets in Finland and the United States that will provide a practical contribution to potentially interested businessmen. Based on the summation of the environmental variables, there appears to be an overall similarity between these two markets :

	Weight	Finland	U.S.
Total	1000	800	834

It is apparent that the Farmer-Richman matrix is not sufficient by itself to provide a complete understanding of the major differences in these two markets. However, it certainly provides a reference framework for most of the critical variables that affect the analysis. A worthwhile area for continued research in international comparative studies would be the possible expansion of this matrix in order to develop a more practical applicational mechanism.

It is considered that the alternative methodology used in this study is preferable to the Delphi Technique. While it lacks the concensus of a large number of people in various fields of endeavor, it seems to possess the following advantages :

The concensus of the judgments of the two individuals can be obtained with much less effort in considerably less time.

The two individuals are businessmen and are thus more aware of the influence of the constraints on business and marketing.

The two individuals are familiar with both markets and are therefore in a better position to measure each factor in a relative sense.

It is concluded for these reasons that the alternative method of measurement provides a more accurate and practical means of conducting a comparative marketing analysis.

Footnotes and Bibliography

1. Erik Berry. The Land and People of Finland. Philadelphia : J. B. Lippincott Company. 1972.

2. A. J. Alton. "Marketing in Finland." Journal of Marketing. Quarterly Publication of the American Marketing Association. Vol. 27. July. 1963.

3. Richard H. Farmer and Barry M. Richman. Comparative Managment and Economic Progress. Bloomington, Indiana ; Cedarwood Publising Company. 1970.

4. A. P. Upton. Finland in Crisis, 1940-1941. London : 1964.

Other Sources :

Bulletin of Statistics. No, 3. Helsinki. 1973.

Henrik Calonius. Kedjebildningarma i Finlandsk Distribution. Lovisa. 1973.

Statistical Yearbook of Finland. Helsinki. 1973.

Survey of Current Business, Department of Commerce, Bureau of the Census. Various issues. Washington, D. C. : Government Printing Office.

Scandinavia. W. R. Mead and Wendy Hall. New York : Walker and Co. 1972.

Social Action—The Vital Need for Indian Planning

Sujit Kumar Ghosh*

Even after a long arduous journey over more than two decades, planning in India has failed to evoke the much-needed public enthusiasm for centralised economic planning. The recent slump of public confidence in the very working of Indian planning may be due to the periodical suspension of five-year plans, unfulfilled targets in many sectors, inequity in distribution of economic gains of planning, persistent economic instability, and so on. The worst of all, the planners themselves have developed a lukewarm attitude. The jugglery of econometricians and orthodox economic theoreticians has proved to be mere intellectual pleasure. Mahalonobis' approach to resource allocation, the uses of Leontief co-efficients and capital-output ratio, and the application of growth models—nothing could touch the grass-root problems of Indian planning. The orthodox measure of development in terms of gross or per capita output has also started losing its flush in the present Indian economic context.

Apart from the issues connected with poor mobilisation of resources, strategic production bottlenecks, market imperfections, ills of distribution, foreign exchange difficulties, etc., a vitally important question is one of 'organisation gap' coupled with a maladjustment of 'apex' planning and 'base' planning. The type of centralism prevailing in our planning process is quite incompatible with the growth of such organisations in the different centres of operation which can be assigned certain specific responsibilities for drawing up parts of the plan. This process, thus, entails a 'communication gap' between the centralised planning drawing up rational plan and those, in the operational units, who should have specific responsibilities for fair amounts of sectoral planning. There has been, in fact, a loss of balance between the structure of production and the availability of resources in such a situation. As for example, in the fields of urban and industrial construction greater production efforts have been made than what the resources position there justifies and again in the cases like labour-utilising land improvement projects less has been done than what is permitted by the resource endowments in such fields. The former type of unbalanced growth has helped create a situation of cost inflation in the sectors concerned and the latter type has obviously added to the dimension of the crisis of unemployment and under-employment. The present economic instability and the resultant plan constraints owe much to both such situations.

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Aside from organisational aspects, the management and implementation crises loom large before our eyes. There is a point of note on the side of management planning. Services at ministerial, governmental and administrative levels are at a low ebb. The effort to ensure effective spread of the improved management know-hows in every possible spheres of plan-administration is none-too-satisfactory. Hence, a disappointingly low point of administrative morality has made the task of necessary co-ordination among the organisations at different levels of plan-implementation well-neigh impossible and the implementation gap continues to exist.

Indian economy consists of a vast rural sector and its predominance in the national economy still remains undiminished. But the model of rural development, some way or other, pursued in course of Indian planning, strikingly deviates from the Gandhian philosophy of 'Antyodaya'—most suitable for rural uplift in India—stressing upon the process of development which comes from below and where the last man is to benefit first. The organisation and management gaps, stated earlier, have unfortunately led to inequality in the distribution of inputs, and gains in the Indian rural sector. What, in fact, is occurring in the rural set-up of this country is a sort of 'democratic explosion' in the sense that the magnitude of rising expectations of those coming forward, enjoying all sorts of privileges, and claiming a share in all good things of life, explodes. This makes the rank and file, waiting for their turn to come, impatient and restless. Peaceless ness and intra-societal tension have thus been the offshots of this sort of rural development.

The 'Elitist model' of rural development, thus appears to work in the rural sectors of this country—the model that concentrates on the development of a favoured few. This development may, of course, percolate down into the lower and wider strata of the society. The process of percolation may be expedited through such means as progressive taxation, subsidies, nationalisation, etc. But this process is quite slow in India. In the context of weak 'spread effect' in Indian agriculture, the application of high yielding variety method of cultivation really helps the accumulation of gains in the hands of few in the rural sector who can afford to bear the high cost of purchasing improved input varieties. Again, the progressive direct tax with less buoyancy and elasticity as compared to the indirect tax has not touched the rural rich to the extent to which it has touched the urban rich. Hence, the elitist model of rural development with inadequate functioning of the percolation process is responsible for 'dualism' in agriculture

In view of such dual character of our agricultural economy, coexistence with organisation gap in our economic planning, it is high time to concentrate on a good amount of base planning to be coordinated with apex planning. Here there is an impelling urgency of following a generic method of development aiming at the development of a large section of the general body. The model of rural development, suitable in this case, is the social cybernetics one which implies a system of control leading to upward and lateral flows. This smacks of Gandhian philosophy of 'Antyodaya'. Here development comes from below. In this case the development is measured not by its gross output but by the rate at which the weaker sections of the population in the region grow or develop.

The philosophy of democratic decentralisation is to be counted upon in this regard. This amounts to better planning at the base —panchayet level planning, block level planning, village level planning and so on. In its turn, such phenomena amount to a direct negation of the organisation gap, mentioned earlier. A method like community organisation one best fits in with such phenomena. The working of this method helps the development of the community through the mobilisation of its own resources and self-adjustment. This is development within. It is here that the process of democratic decentralisation comes to its own. The assignment of specific responsibilities regarding planning to various socially-motivated organisations in actual fields of operation serves the purpose of planning from below and so helps cover the organisation gap which is one of the vital factors accounting for the present crisis of Indian planning. The grass root problem of Indian planning lies in such organisational aspects of planning. And the yawning gaps in employment services, prices hike both in factor and product markets, and payments difficulties in the field of international transaction have made the crises of planning all the more acute.

Therefore, the vital need for the present Indian planning is to secure a synthesis of the cybernetic model of rural development and the generic and community organisation methods. This process of synthesis corresponds to the principles of 'social action' that inheres all the features of the eclectic approach to an all-comprehensive development. All the socially-motivated organisations at the base should be so energised as to ensure proper social mobilisation and adequate social cohesion. The forces of intra-societal solidarity and consolidation thus gather momentum and negate all possibilities of disintegration of the community. This calls for proper building up of social infrastructure which cuts across all the barriers standing in the way of social mobility and social interaction and closes the communication gap. Various types of social organisations both external catalyst bodies like Ramakrishna Mission and other social welfare organisations and government bodies, etc. and also internal organisation consisting of the local and village people, properly organised, equipped and motivated are called upon to play their roles in putting into function the social cybernetics model, dovetailed with the generic and community organisation methods of development. This is as much as to putting into effect the 'planning from below' which is best suited to Indian set-up of democratic planning with all the features of over-centralism in planning that virtually concentrates on 'planning from above'. The principles of social action and the eclectic approach to development, akin to the Gandhian philosophy of 'Antyodaya', most appropriate economic philosophy for Indian set-up, clearly militate against the present type of centralism and the consequent organisation gap endangering the present Indian plans, stripped of the philosophies of social action and eclecticism in its approach to rural development, can never come out of the crisis that strikes at its very base. Indian society is hardly poised to show the green light to the mere 'planning from above' After all, development must start from below. And this way lies sanity.

Proclamations of the World Food Conference

1. Every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to develop fully and maintain their physical and mental faculties. Society today already possesses sufficient resources, organizational ability, and technology and hence the competence to achieve this objective. Accordingly, the eradication of hunger is a common objective of all the countries of the international community, especially of the developed countries and others in a position to help.

2. It is a fundamental responsibility of Governments to work together for higher food production and a more equitable and efficient distribution of food between countries and within countries. Governments should initiate immediately a greater concerted attack on chronic malnutrition and deficiency diseases among the vulnerable and lower income groups. In order to ensure adequate nutrition for all, Governments should formulate appropriate food and nutrition policies integrated in over-all socio-economic and agricultural development plans based on adequate knowledge of available as well as potential food resources. The importance of human milk in this connexion should be stressed on nutritional grounds.

3. Food problems must be tackled during the preparation and implementation of national plans and programmes for economic and social development, with emphasis on their humanitarian aspects.

4. It is a responsibility of each State concerned, in accordance with its sovereign judgement and internal legislation, to remove the obstacles to food production and provide proper incentives to agricultural producers. Of prime importance for the attainment of these objectives are effective measures of socio-economic transformation by agrarian, tax, credit and investment policy reform and the reorganization of rural structures, such as the reform of the conditions of ownership, the encouragement of producer and consumer co-operatives, the mobilization of the full potential of human resources, both male and female, in the developing countries for integrated rural development and the involvement of the small farmers, fishermen and the landless

workers in attaining the required food production and employment targets. Moreover, it is necessary to recognize the key role of women in agricultural production and rural economy in many countries, and to ensure that appropriate education, extension programmes and financial facilities are made available to women on equal terms with men.

5. Marine and inland water resources are today becoming more important than ever as a source of food and economic prosperity. Accordingly, action should be taken to promote a rational exploitation of these resources, preferably for direct human consumption, in order to contribute to meeting the food requirements of all peoples. The efforts to increase food production should be complemented by every endeavour to prevent wastage of food in all its forms.

6. To give impetus to food production in developing countries and in particular in the least developed and most seriously affected among them, urgent and effective international action should be taken, by the developed countries and other countries in a position to do so, to provide them with sustained additional technical and financial assistance on favourable terms and in a volume sufficient to their needs on the basis of bilateral and multilateral arrangements. This assistance must be free of conditions in consistent with sovereignty of the receiving States.

7. All countries, and primarily the highly industrialized countries, should promote the advancement of food production technology and should make all efforts to promote the transfer, adaptation and dissemination of appropriate food production technology for the benefit of the developing countries and to that end they should *inter alia* make all efforts to disseminate the results of their research work to Governments and scientific institutions of developing countries in order to enable them to promote a sustained agricultural development. To assure the proper conservation of natural resources being utilized or utilizable for food production, all countries must collaborate in order to facilitate the preservation of the environment, including the marine environment.

8. All developed countries and others able to do so should collaborate technically and financially with the developing countries in their efforts to expand land and water resources for agricultural production and to assure a rapid increase in the availability, at fair costs, of agricultural inputs such as fertilizers and other chemicals, high-quality seeds, credit and technology. Co-operation among developing countries, in this connexion, is also important.

9. All States should strive to the utmost to readjust, where

appropriate, their agricultural policies to give priority to food production recognizing, in this connexion, the interrelationship between the world food problem and international trade. In the determination of attitudes toward farm support programmes for domestic food production, developed countries should take into account, as far as possible, the interest of the food exporting developing countries, in order to avoid detrimental effect on their exports. Moreover, all countries should co-operate to devise effective steps to deal with the problem of stabilizing world markets and promoting equitable and remunerative prices, where appropriate through international arrangements, to improve access to markets through reduction or elimination of tariff and non-tariff barriers on the products of interest to the developing countries, to substantially increase the export earnings of these countries, to contribute to the diversification of their exports, and apply to them, in the multilateral trade negotiations, the principles as agreed upon in the Tokyo Declaration including the concept of non-reciprocity and more favourable treatment.

10. As it is the common responsibility of the entire international community to ensure the availability at all times of adequate world supplies of basic food-stuffs by way of appropriate reserves including emergency reserves, all countries should co-operate in the establishment of an effective system of world food security by :

—participating in and supporting the operation of the Global Information and Early Warning System on Food and Agriculture ;

—adhering to the objectives, policies and guidelines of the proposed international Undertaking on World Food Security as endorsed by the World Food Conference ;

—ear-marking, where possible, stocks or funds for meeting international emergency food requirements as envisaged in the proposed international guidelines to provide for the co-ordination and the utilization of such stocks ;

—co-operating in the provision of food aid for meeting emergency and nutritional needs as well as for stimulating rural employment through development projects.

All donor countries should accept and implement the concept of forward planning of food aid and make all efforts to provide commodities and/or financial assistance that will ensure adequate quantities of grains and other food commodities. Time is short. Urgent and sustained action is vital. The Conference, therefore, calls upon all peoples expressing their will as individuals. and through their Governments and non governmental organizations, to work together to bring about the end of the age-old scourge of hunger.

OBJECTIVES AND STRATEGIES OF FOOD PRODUCTION

The World Food Conference

Recognizing that past trends in food production and productivity in the majority of developing countries have been unsatisfactory, for reasons, among others, of inadequate socio-economic structures, insufficient investment funds, paucity of trained manpower, and unfavourable trade relations,

Noting that if these trends were to continue the expected increase in the demand for food in these countries will raise their import requirements to unmanageable proportions, aggravate malnutrition and intensify human suffering,

Expressing concern at the inadequate performence of agriculture, including livestock and fisheries, in many developing countries in relation to the targets of the Second United Nations Development Decade and their own national objectives, at the new constraints created by the scarcity of inputs and at the inadequacy of the present level of resources including development assistance flowing to agriculture in these countries,

Considering that agricultural production in the developing countries requires the availability of inputs at reasonable prices,

Stressing that an increase in agricultural productivity and sustained expansion of food production in these countries at a rate much faster than in the past is essential in order to meet the rapidly growing demand for food, due to rising population and incomes, the requirements for security stocks and the need to raise the consumption by undernourished people to universally accepted standards,

Recognizing the importance of fish products for the improvement of quality of human diet and the potential for increased fish production especially in developing countries,

Recognizing that in many developing countries there is considerable scope for increased production through bringing new land under cultivation or through more intensive use of land already under cultivation,

Recognizing that in many developing countries large quantities of food are lost between the farm field and the consumer and that the deterioration in the nutritional value of food before it reaches the consumer is a serious problem ;

Considering that conditions in certain developed countries are favourable for the rapid increase of food production and recognizing that some countries can produce more food than they need and thus are able to export ; that reliance on this production to supply the growing needs of the developing countries and some developed countries is increasing ; that for years these exporting countries have been concerned that production at full capacity could create undesirable surpluses and thus depressed markets, which would deprive farmers of incentives to invest and to produce, and that in view of the present and prospective demand for food in the world such a concern may no longer be relevant,

Stressing the urgent need for greater efforts by the developing countries themselves and for increased regional, sub-regional and international co-operation for agricultural[1] development in these countries, as part of the International Development Strategy for the Second United Nations Development Decade,

Stressing the importance, in selecting the measures to be taken to achieve the urgently needed increases in food output, of taking into account the need for the most efficient use of land and water resources, the short and long-term effects of alternative technologies on the quality of the environment,

Affirming that in order to solve the food problem, highest priority should be given to policies and programmes for increasing food production and improving food utilization in developing countries, so as to achieve a minimum agricultural growth rate of 4 per cent per annum, placing appropriate emphasis on (i) providing adequate supplies of essential inputs, such as fertilizers, pesticides, quality seeds, farm and fishery equipment and machinery, fuel, breeding stock and water ; (ii) ensuring sufficient incentives to farmers ; (iii) developing rural infrastructures, including storage, processing, transportation, marketing, input supply systems, credit and educational and social amenities ; (iv) conservation and improvement of existing cultivated and cultivable land ; (v) reclamation and development of new land ; (vi) promoting research training and extension ; (vii) progressive social and structural transformation of agriculture ; (viii) active participation of the rural population, particularly small farmers and landless workers in the development process, and (ix) providing the necessary financial resources.

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[1] Including livestock and fisheries.

1. *Resolves* that all governments should accept the removal of the scourage of hunger and malnutrition, which at presnt afflicts many millions of human beings, as the objective of the international community as a whole, and accept the goal that within a decade no child will go to bed hungry, that no family will fear for its next day's bread, and that no human being's future and capacities will be stunted by malnutrition,

2. *Calls on* the government of each developing country to :

(i) accord a ***high*** priority to agricultural and fisheries development ;

(ii) formulate food production and food utilization objectives, targets and policies, for the short, medium and long-term, with full participation of producers, their families, and farmers' and fishermens, organizations, taking into account its demographic and general development goals and consistent with good environment practices ;

(iii) take measures for agrarian reform and a progressive change in the socio-economic structures and relationships in rural areas ; and

(iv) develop adequate supporting services for agricultural and fisheries development, including those for education, research, extension and training, marketing, storage and processing, transport, as well as credit facilities and incentives to enable producers to buy the required inputs ;

3. *Calls on all governments* able to furnish external assistance to substantially increase, their official development assistance to agriculture in developing countries, especially the least developed and the most seriously affected countries, including capital assistance on soft terms, technical assistance, transfer of appropriate technology and programme loans for imports of essential inputs ;

4. *Requests* governments to make arrangements whereby developing countries will have access to inputs such as fertilizer, pesticides, agricultural machinery and equipment in sufficient quantity and at reasonable prices ;

5. *Urges* governments to respond to the appeal of the Secretary-General of the United Nations for contributions to the Special Programme, the urgent implementation of which is essential for ensuring progress in resolving the food problem of the developing

countries seriously affected by the economic crisis, and to contribute generously to the International Fund for Agricultural Development proposed by the Conference;

6. *Urges* the developed countries concerned to adopt and to implement agricultural policies which encourage the early expansion of food production while taking into account a satisfactory level of income for producers and world food requirements and the need of maintaining reasonable prices for consumers, such policies should not impede or delay the increase in food production by developing countries, both for domestic consumption and for export;

7. *Requests* all countries to reduce to a minimum the waste of food and of agricultural resources, in particular land, water and all forms of energy; and to ensure the rational utilization of fisheries resources;

8. *Calls on* the regional economic commissions to continue their important contribution to the task of stimulating co-ordinated economic development in their respective regions, by co-operating in the efforts in this direction that the countries in those regions are making;

9. *Urges* FAO in consultation with UNDP and other relevant international institutions, with due regard for national sovereignty:

(a) to formulate economic, social, physical and biological criteria for selecting suitable additional areas for food production,

(b) to make an inventory, on the basis of these criteria, of the areas most suitable for additional production,

(c) to make an inventory of resources available for financing additional production, and

(d) to indicate ways and means for carrying out programmes and projects for additional food production;

10. *Requests* the World Bank, Regional Banks, UNDP, FAO, UNIDO and other international agencies, through modification of their existing policies and criteria as appropriate, to substantially increase their assistance for agriculture and fisheries in developing countries giving priority to programmes and projects aimed at benefiting the poorest groups of the population and placing equal emphasis on both economic and social benefits; simplify and streamline the procedures for the granting of such assistance; and mobilize the support of the entire international community including non-governmental organizations, for the urgent task of overcoming hunger and malnutrition.*

* Source: World Food Conference, 1974, Rome.

Corrigendum

The co-writer of article on "Study of Marketable Surplus of Paddy in Sahabad District" (Jan-Feb 1975) is Dr. R. K. Pandey and not Dr. R. R. Pandey.

Editor

(Continued from page 232)

last 7 years. Indices of prices showed that prices of transport, milk, bread, etc. have remained unchanged for the last 15 years. In house rents there have been no change since 1951. Some marginal price has been noticed in rynoks i.e. products of kitchen gardens in the big cities. The price policy usually followed since 1967 is expressed in an equation C+EK where C implies cost, E co-efficient of profit and K the productive assets per unit of output. Increase in cost is absorbed in price by reducing E and not raising the price. The balanced budgets of States had also facilitated the stability of the prices.

German Democratic Republic: During 1970-73 the prices fell marginally in the GDR. In GDR strict control is maintained over prices and any increase in demand is met by increased production. Under an agreement with the USSR 50% of increase in turnover is envisagad during 1971-75. The price stability is evident from the fact that during 1963-73 the GNP has doubled and so money supply has also doubled from 4543 million mark to 9181 million mark. Hence the increase in money supply has been fully neutralised by productive forces.

Czechoslovakia: During 1970-73 there was a marginal decrease in retail prices. Due to high level of consumption the rate of saving has gone up to 18%, as people has no scope for increasing spending.

Poland: Poland witnessed food riot in 1970. During 1960-73 prices of goods and services rose by 14.7% but the national income was also more than doubled during the same period. Poland's 39% export of the total goes to the non-socialist countries. The large scale foreign trade relations with non-socialist countries are exerting some pressure on the price line.

Hungary: During 1960-73 retail prices rose by 13.3%. This could be achieved by administrative prices in a planned manner which maintains equilibrium between demand and supply. In 1968 price reform was introduced under which fixed, maximum and semi-elastic market prices were to exist side by side.

Rumania: Between 1970 and 1973 prices rose by 1.6%. The main contributor to this stability was 7-8% annual increase in the production of consumer goods representing 7% annual rise in real income.

China: A study of indices of commodity prices in China during 1950-71 shows a fall of 4-5% in the prices. The function of prices in China according to the Chinese State Planning Commission is "to serve the system of planned economic growth and protect and advance the standard of living of the people". In China the price and service rates are administered by provincial or municipal price commissions. The industrial prices for national industries are fixed for the whole country. "The prices of grains occupied a pivotal position in the Chinese economy. The consumer prices of all industrial products were based on it."

Yugoslavia : After its break from traditional socialist nations of East Europe Yugoslavia devised a decentralised planning and during 1952-73 achieved an average growth rate of 7%. However inflation is one of the foremost problems facing Yugoslavia. Large import bills caused inflationary expansion in money supply. During 1963-73 the prices rose by 29.8 annually. During 1972 the prices rose by 16.8%. The value of her currency (Dinar) dropped by 75% during 1963-73 and by 15% during 1974 alone.

India adopted a system of planned economic growth in 1950 to secure rapid economic development of the country. In fact India was the first country outside communist periphery which opted for a planned economy. In 1954 the ultimate objective of economic policy was defined as the attainment of a socialistic pattern of society. Thus a socialist goal, planned economy intermixed in a mixed economic texture, has coloured and conditioned the economic policies, plans and growth of the country during last two decades.

However the objectives of socialism and planning have been sought to be achieved within a democratic frame. India opted for a planned economy at the infancy of the independent India. But the monetary management and policy still run in the traditional ways. The inflationary traits of the economy reflect fully on the inadequacies of the monetary management to deal with the price situation effectively. The existing monetary policy is tailored to suit the climate of a competitive economy. The tools of the monetary policy as applied by the Reserve Bank of India namely, the bank rate, open market operations, variations in reserve ratio, or selective method o issue of directives, were mainly designed to subserve an unplanned market economy. The Schumpeterian notion of monetary expansion in anticipation of flow of real income followed since the First Plan days has permitted a monetary explosion. The supply of money during last few years has been increasing at over 14% yearly while the growth rate is barely 3%. Thus the excessive generation of money has out-distanced the real production and constitutes one of the basic causes of the present galloping inflation. The efficacy of the monetary management, as practised by the RBI presently, is restricted.

India's monetary policy and management need to be production linked. The flow of money resources should be regulated on the basis of a Monetary Plan to be constructed on the basis of production and/or turnover indices. Either India should opt for monetary management as practised in the socialist planned countries or some innovation like Brazillian's 'monetary correction' should be designed to suit the exigencies and peculiarities of India's planned economy wedded to socialism following a mixed pattern.

ECONOMIC AFFAIRS

Volume 20 July 1975 No. 7

Regional Banks

The Union Finance Minister has announced the possible inauguration of fifty or more regional banks on 2nd October this year, on Gandhi Jayanti day. The objects of the banks will be to provide credit and agricultural inputs to small farms. Each regional bank will have branches that will serve rural population of 10 million in a set-up and salary structure which will be in harmony with rural surroundings.

The proposed regional banks may be a product of the 'hard decision' warranted for inflicting "shock" to the country's socio-economic structure that it "may get awakened from slumber" or an effort towards stabilization of the downward trend of prices lest it crashes "at an uneconomic level which itself will create many other problems". It is quite apparent that the idea behind the establishment of the proposed regional banks is to pose a correction of the failure of the nationalised banks to fulfil the credit and inputs needs of the rural underprivileged. They have failed in the assessment of emotional expectations. The Union Finance Minister has discreetly admitted that the staff of the nationalised banks is so fatly paid and its outlook is so urbane that it is by and large unsuitable to get identified with the rural people and problems. The very presence of such bank officials in the villages will cause more social hostilities than identities. Now perhaps he tacitly expects that the modesty of the regional banks will be inviting to the rural people.

But thereby he contemplates to introduce a two-sector banking system, unintentionally marking one inferior to another. This will, over time at least, create rivalry between the regional banks and nationalized banks until it resolves itself through the development of common urbane outlook. Reserve Bank of India will also find greater difficulties in controlling a two-sector banking system, the urban banks overstepping the area of operation of the regional banks on many fronts.

Deeper still, why have the agriculture oriented nationalised banks failed to provide adequate credit and ensure sufficient inputs to the small farms ? This cannot be accounted for by the urbane set-up and salary structure of the nationalized banks alone. The real reason is that a bank worth its name cannot make an emotional investment. It will demand the credit-worthiness of the borrowers, which the underprivileged can hardly provide. Besides there is the general and strong apathy of the rural people to accept inventions and innovations. To be to the point, they cannot think credit in any other terms than in terms of their pleasure of being exploited by the village moneylenders. At the top of this rests the economic expectation that the rural credit should be fed by the rural savings. Comes thus the point of mopping up the rural savings. Communication gap, lack of safe vaults, and inconvenience of remittance of funds are the big hurdles here. Still further, rural savings are mostly in the hands of rural high-ups, whose accumulations are not always legally or socially accountable. They as such prefer outright hoarding or transfer of fund to the urban banks at some distant points. This means the response of rural savings to rural banking facilities is poor. The absence of investment opportunities and the curbs on lending rates have made the banking, as business, all the more discouraging in rural areas.

So far as the making of provision for agricultural inputs is concerned the banks have no direct responsibility. Their primary responsibility lies in providing credit and not inputs. The latter is the function of production. But would the availability of inputs be the sufficient condition for the agricultural growth ? The answer is, No. For there is the factor of conversion of inputs into output for any competitive market. This involves human skill and economic and social acceptability of the output. The banks cannot build up skills nor can they create attitudes. Their role in influencing business expectations is also extremely limited. This is not all. The delayed supply of inputs has been a baffling problem to the economy. The banks are again a silent seer of it save that they may create more inflation to avoid further inflation. The regional banks as such, therefore, cannot be a sufficient thrust for giving a new look to our rural economy.

Review

The Economic Development and Growth, G. P. Mishra, Ranchi Publishing House, Ranchi, First Edition August 1974, Price Rs. 20.00.

Doubts are rampant about the practical utility and use of a growth model. It is viewed by many that a growth model is the product of a theoretical exercise, sometimes in ex post and sometimes in ex anti forms based on a number of oversimplified assumptions which have little bearing upon reality. For the students, however, the growth models are very important both for examination purpose and for making up their training in theoretical economics. They want all the important growth models in one place. There are a few books like that. In this respect Dr. G. P. Mishra's work seems to be a pioneer.

Dr. Mishra has taken twentytwo chapters and one appendix to explain the growth models of both classical and modern economists. His inclusions range from Smith, Ricardo, Malthus, Marx, Schumpeter, Rostow, Keynes, Harrod, Domar, Meade, Robinson, Kelecki, Nurkse, Lewis, Leibenstein, Myrdal. Hirschman, and Mahalanobis. Each model is discussed with little of mathematics, sophistication and obsession. He has even tried to strike out a "synthesis" of the models. An attractive feature of his work is the study of policy implications of a model. This has given a practical look to an otherwise abstract model. His unkindness to Domar is noticeable.

Inflation : Causes and Cures, Mrityunjoy Banerjee, World Press Private Limited, Calcutta 12, 1975, Price Rs. 30.00.

The author finds there is hardly any comprehensive book that deals with the nature, causes, consequences and possible cures of inflation and feels ambitious to deal with all of them in one place. With this end in view he has discussed analytically some classical and modern approaches to theory of inflation, including its theoretical consequences and the control measures. Though brief, the discussions have touched all the basic points and are within easy comprehension of both students and laymen. Giving a resume of history of inflation he delves into the nature and problems of inflation in developing countries, which seems to be his main field of interest. His developing countries cover Brazil, Indonesia, Israel and Mexico. Although not clear how far the experiences of these countries are helpful for the study of inflation in India, he has taken up the case of India since independence emphasizing the relations of inflation and growth. Then he has prepared the measures taken by the Government to control inflation in this country. Lastly he offers his suggestions to control inflation in India.

The work shows the author's extensive study on inflation and reveals his analytical mind of explaining complex problems, precisely and to the points. The whole work is brightened by empirical supports. As a technique it is commendable. His suggestions to control inflation, in Indian context, are not novel. Perhaps he is aware that in a capitalist economy one has to learn to live with inflation, and, in a socialist economy with suppressed inflation or subsidized growth.

Tea Statistics 1973-74, Tea Board of India, Calcutta, Price Rs. 10.00.

The present publication is the twentieth in the series. Every publication in this series has been marked by expanding scope, coverage and orientation. This issue is also no exception to it. A tea man and a researcher in tea cannot go without this publication which is rich in wealth of authentic information on tea in retrospect.

New Economic Measures

The following is the text of the Prime Minister's broadcast on new economic measures.

I am going to speak to you about some economic programmes which Government propose to follow. Some of them are new. Others were set forth earlier, but require to be pursued with greater vigour and determination. Please do not expect magic remedies and dramatic results. There is only one magic which can remove poverty and that is hard work, sustained by clear vision, iron will and the strictest discipline.

Each one of us in our place should determine to do more for our fellow citizen, not only for ourselves.

There must be greater respect for State property, its destruction will be visited by punitive fines.

We also need to follow a far stricter code of austerity all around. Government has its duty to curb conspicuous consumption, but citizens also have a responsibility. That is the only way to better the life of of the nation.

The campaign of law breaking, paralysing national activity and inciting our security forces to indiscipline and disobedience would have led to economic chaos and collapse, and our country would have become vulnerable to fissiparious tendencies and external danger. With the fumes of hatred having cleared somewhat, we can see our economic goals with greater clarity and urgency. The emergency provides us a new opportunity to go ahead with our economic tasks.

Price Front

The first and foremost challenge is the price front. In the last five days prices of many articles have shown a downward trend. This trend will have to be maintained. To this end Government will take a series of steps to stimulate production, speed up procurement and streamline the distribution of essential commodities. Stay orders have prevented procurement of paddy in West Bengal and Orissa.

Our outlook in regard to foreign exchange resources is reasonably satisfactory. Where necessary imports will be arranged so that supplies are sufficient.

The State Government have already been asked to advise dealers to display lists of prices and statements of stocks. Hoarders and those who violate the rules will be severely punished.

This anti-inflation strategy has to be continued. Credit must be carefully regulated on a selective basis.

Government departments and public enterprises have new orders to cut out in essential expenditure.

The vast majority of our people live in the rural areas. We must implement ceiling laws and distribute surplus land among the landless with redouble zeal. We want the help of the local people in completing land records. Special care will have to be taken to ensure that the tribal people are not deprived of their land.

House Sites

The programme of providing house sites in the rural areas will be vastly expanded. Laws will be introduced to confer ownership rights on landless labourers who have been in occupation of house sites of their landlords over a certain period. Resort to evictions will be sternly dealt with.

The practice of bonded labour is barbarous and will be abolished. All contracts or other arrangements under which services of such bonded labour are now secured will be illegal.

We propose to take action by stages to liquidate rural indebtedness. While new schemes will be drawn up to devise alternative agencies to provide institutional credit to landless labourers, rural artisans and small and marginal farmers who own less than two hectares, there will be a moratorium on suits and execution of decrees for the recovery of debts from such groups.

Debts from cooperatives, commercial banks and Governments will be excluded from this scheme.

Agricultural labour is among the worst exploited sections of our society. A review of the existing legislation of minimum wages for agricultural labour will be initiated for suitable enhancement of minimum wages wherever necessary.

Water Resources

We must go all out to increase production. Water and power hold the key to higher agricultural and industrial output. Steps are being taken to bring under irrigation at least five million more

(Continued on page 311)

On Agricultural Taxation

Kalyanbrata Bhattacharyya*

The rationalization of agricultural tax scheme seems a far cry still today. State governments who should be the real architects of the change or reform are acting most contradictorily. On the one hand different development efforts including the Five Year Plans are being pruned and plan holidays are adhered to owing to the paucity of funds, and on the other non-development expenditures are indulged into, revenues are allowed to glide into concessions. More often than not, these concessions are the direct outcome of government inactions. Only once, the state governments deliberately sacrificied wholly or partially an age-old source of revenue,[1] presumably with an eye more to the immediate political gains than to the provision of economic incentives. Such actions or lack of actions neither brought sufficient funds to the State exchequers nor enthused the people to put in greater productive efforts. Public sector projects were crippled for poor mobilisation of resources and private sector endeavours hardly got the critical minimum push, notwithstanding the fiscal fillips and inherent commercial motivations. However, it would be incorrect to presume that the fiscal authorities are unaware of the above facts even if the ignorance on their part may possibly explain their inactions. In fact, in a democratic country economic prudence generally plays second fiddle to political designs. State governments prefer the nurture of an assured section of voters to an expanding and buoyant economy. The suggestion is not that there exists a trade-off between the two. But the immediate relief and concessions appeal to human minds more effectively than does the long-drawn and patient endeavour of economic development. The general voters seldom scrutinise the economic programmes of the parties with a long term point of view. The immediate and personal benefits constitute the focal point of voting behaviour. Consequently the policies of the State governments are framed with a myopic evaluation of alternative implications. Fiscal levies remain considerably underplayed in

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comparison to their potency from the social point of view. Catalytic forces of economic development are kept back by poor assistance to their generation and pervasion. In the process the development is not only delayed but allowed to be arrested in an inert sphere.

The propriety of above observations will be examined here in the context of the economy of West Bengal vis-a-vis land revenue. Consitutional parameters assert a state level discussion more meaningful so far as agricultural taxation is concerned. So the locative plank of the study covers only the state of West Bengal. And a proxy variable in the shape of land revenue is pressed into service to substitute agricultural taxation so as not to make a hotchpotch of different tax bases and rates. Land revenue is preferred to other constituents of agricultural tax scheme as despite a sagging fiscal importance of more than a century it remains the most productive tax upon the agricultural sector.

II

Any appraisal of a tax should start with an explicit pointer to its fiscal significance. Towards the beginning of the era of planning in this country in 1951-52 land revenue accounted for 8.8% of state tax revenue. In 1954-55 in consequence of the abolition of intermediary rights throughout the state actual rents payable to Zamindars substituted for land revenue in the fiscal structure of the state. However, immediatly afterwards rents (or new land revenue) contributed more than 12% of the reveuue collected from the state taxes in 1955-56. More or less, relative productivity of the tax remained at the same level up to 1962-63. Then followed a period of sagging importance of this source of revenue leading the tax ultimately in 1972-73 to an insignificant contributor of funds to the tune of 3% of state tax revenue only. In the meantime in 1970-71 the government hastened its downfall through the exemption of lands up to three acres (1.2 hectares) from the obligation of paying this tax after a continued spell of about 180 years.[2] The same government measure enhanced the tax obligation of lands beyond three acres twofold of present rate in non-irrigated areas and three-fold in irrigated areas with effect from 1972-73. But the delayed measure disturbed a long cherished tax threshold and generated a strong threshold effect such that a number of litigations in the Courts restrain the government from collecting the tax from many holdings.

Before proceeding far enough the relation between rent and land revenue needs clarification and settlement in the interest of a determinate analysis. When permanent settlement was enacted in 1793 land revenue constituted 90% of rent, collected by the Zamindars from the raiyats who were the actual land holders. Since then land revenue remained unaltered till its substitution in 1954-55. But rent swelled frequently and significantly till at last it strode to several times of land revenue. Revenue data for the thirteen districts now forming parts of West Bengal for three consecutive years starting with 1939-40 show a ratio of about 4 in favour of rent as compared to land revenue. Past trends justify an apprehension that in the post war years rent got still more inflated.[3] Data for those years are not available. To err on the safe side, the ratio dictated by the available data, though somewhat old, will be accepted in this study. And in the light of this relationship the decline in the fiscal significance of this tax in more precipitous over the years from 8.8% in 1951-52 to 0.75% (i.e. one fourth of 3%) in 1972-73.

Fiscal significance of a tax is an indicator of macro level relevence. It measures the growth rate of revenue from the tax in question in comparison to the same of other taxes. Declining significance is the obvious fate of a tax remaining rigid through the ages, as land revenue remained, once from 1793 to 1953-54 and again from 1954-55 to 1969-70. The very antiquity of the rates drew off the tax already (before the fifties) out of alignment with the fiscal structure of the state.

III

Not only the fiscal pattern of the state developed out of proportion of the tax, the effective base also registered a major growth rate so that a very slender slice of the base could be attracted by the tax. Whatever might have been the basis of taxation at the points of its imposition,[4] the recent status of this was hardly better than a crude acreage tax.[5] For all practical purposes, the payment of land revenue became a charge upon the income of cultivated lands, which was steadily and continually on the march particularly since the world War II. The impact of the tax got lighter and lighter so much so that the burden of the tax could scarcely be felt by the tax payers.[7] Government revenue dwindled but the government preferred sitting tight over the matter. Exploitation of the tax base is directly dependent on the rate of taxation. Any tax, the rate of which fails to take account of an expanding base, renders its retention a fiscal nuisance.

Land revenue rate is far from uniform throughout the state and, as pointed out earlier, has no relation with the income from land. So land revenue actually collected per acre of net sown area has been used to substitute a precise rate for the whole state. In West Bengal crop distinction has no bearing upon the land revenue rates these days.* This makes a single rate of tax applicable in the determination of tax burden upon any and every type of income from land. The determinants of this income are commodity prices and productivity of the soil. Both have a direct relation with the level of income, the virtual tax base. It may be shown the prices of agricultural commodities pulled down the burden of tax expressed as commodity equivalents of tax obligation in different years. In consideration to the accessibility of tax payers to various levels of prices it seems appropriate to utilize harvest prices in these exercises. Six crops (three each from the food and the non-food groups) roughly in descending order of the cultivated acreages in the last three years have been selected for the study. It may be discerned that the quinquennium averages of the commodity equivalents declined by 67.1%, 51.6%, 65.4%, 49.5%, 67.1% and 64.2% respectively in the case of rice, wheat, gram, jute, sugar (raw) and rape and mustard between the initial and terminal quinquennia.

Another blade of the scissors is yet to be reckoned with. This is the trend of productivity of different commodities. While prices pull up the money value of the income from lands, increased yield rates raise real returns. However, in this case the tax obligation being fixed amount of money, the rise in the real income lightens the burden. The combined effect of real and price changes upon income may be represented through a single indicator of trend of gross income. Against a given level of taxation, the moving gross income alters the burden of the tax. Table 1 shows the gross incomes per acre of land under different crops in selected years and the tax obligations as percentage of such incomes. Evidently the burden of the tax in terms of gross income also recorded a sharp fall.

IV

Locally conclusive and certain index of a declining tax burden should end up with the level of net income as the denominator. Such an index is free from the most of the limitations encountered by the earlier indices. But the cost of this certainty and finality is beyond average efforts and opportunity. The cost of production of crops even of a particular area is a variable requiring tremendous efforts and intimate knowledge of the details for its quantification. A representative estimate of the cost of production of crops for the state is still more hazardous, particularly in view of the inherent variability in resource endowment, different cultivation practices, the unequal intensity of input utilisation, varying degrees of accessibility to complimentary factors like water, improved seed, etc., the inevitable variation in input qualities and the difficulty in allocating joint costs.[9] The problems involved are seemingly insurmountable. However, accidental influences apart, output price-spreads may be expected to reflect the trend of input costs to a significant degree. And on this basis, also to evade the inconveniences, a normative estimate of cost may be accepted, obviously without much claim to relevance and precision. For quite palpable reasons, the trend of such net income will be identical to that of gross income. Only importance of this computation lies in the explicit level of tax burden that may be gauged from this exercise. Be it so, a conservative estimate of net income may be made by earmarking the half of the gross income, the portion customarily with the cost bearing tenants-at-will, as the cost of cultivation. The emerging conclusion seems to reinforce the earlier observations. The tax impact underwent a significant decline. However, the conclusion must be accepted with extreme reservation.

Notwithstanding the above facts, a cautious observer may think the greater real income, measured in terms of agricultural output after tax payment, does not necessarily entitle a tax payer to larger non-agricultural products. In other words, the rising cost of living for the agriculturists may outpace the trend of after tax income of the tax-payers. Instead of being better off the agriculturists may suffer a set-back in their income. The problem resolves itself into one of sectoral terms of trade under given productivity of agricultural commodities. Rising agricultural prices promote the incomes and higher agricultural and non-agricultural prices pull up the expenditures of the agriculturists. The net effect depends upon both the share of non-agricultural items in the total consumption and the terms of trade for the agricultural sector. While the relate share of agricultural expenditures determines the quantum of net effect, the terms of trade primarily determine the direction of changes. Apparently, not a substantial portion of agricultural income is devoted to non-agricultural commodities. So, the likely effect of an adverse terms of trade appears less than significant. However, Table 2 presents a comparative trend of agricultural prices, gross agricultural incomes and the cost of living of agricultural population. In the absence of more sophisticated data relatively crude indicators have been utilised. However the cost of living indices though relatively higher in the fifties, fell well short of income indices in the sixties. In fact, the growth rate of cost of living index was steeper only during the first half of the fifties. Thus except for a brief period the real income of agriculturists moved progressively.

The revision of rates is essentially a routine work for those taxes, the rates of which bear no nexus to the tax base. Periodical changes in the base must be taken account of so that the rate or the revenue may not move out of alignment and thus becomes subject to a process of slow erosion. Implicit in this argument is the fact that taxes are not neutral, rather they are important levers for definite objectives.[10] Any tax intended to serve any purpose should never await delayed revision. Because the effect of the tax will not be generated properly if its revision is neglected. Policy implications of fiscal devices may be destroyed or kept underplayed owing to this negligence.

But, as evident from the discussion so far, the government of West Bengal kept the revision of land revenue long over due. Consequently the government's command over resources dwindled progressively and the landowners were left with an ever increasing portion of their products. The process virtually amounted to an automatic transfer of funds from the public hands to the private. From an economic point of view the developments may be said to be justifiable only if it is conceded that the productivity of transferred resources is greater in private hands than in public management. Unfortunately a controversy may be waged here between social productivity and private productivity. Greater productivity of the resources appears to be an automatic response to better or higher inputs particularly in the agricultural sector. But in the present shortage economy neither net higher nor better input is available to the farmers.[11] Water, power, fertiliser, better seeds and equipments all are already short in supply as compared to the demand. So the increased fund left with the landowners will be utilised for a hundred different objects except buying new inputs for promoting productivity. However, on a limited scale micro level changeover of inputs may take place obviously affecting little the social productivity.[12]

On the other hand, the pooling together of these funds through timely revisions could have equipped the government with sufficient resources for at least a few tons of improved seeds annually, or power supply to some more villages, or a minor if not a medium scheme of irrigation. In the given situation of the state, the productive potential of public projects are thus definitely higher than that of the private endeavours. The delayed revision does not seem to have helped the growth process, rather the probability of a few strategic pushes, that could have rolled the ball of development at least some way ahead remained unattended.

Lack of actions apart, even the only action the government found convenient to undertake hardly proved incentive to the landowners and beneficial to the community. The exemption provided in the government measure entitles a landowner to Rs. 15.00 per annum at the most.[13] Bulk of the exempted londowners will enjoy relief of smaller amounts. Now, is it likely that those indigent landowners will save the sum and accumulate it until the accumulation may fetch in a new bullock or a shallow tubewell or a significant improvement in his equipment ? In all probability, the relief will be drained through consumption, the amount of which may liberally be restricted to 8 kgs. of rice per annum. Again, does the situation look hopeful for an improved health condition and the consequent promotion of productivity of labour ? Then what is the rational behind this exemption ? Is it aimed at the removal of an undue burden ? The obvious answer seems to be the absurdity of the proposition even of a burdon after a continuous spell of about 180 years of the tax.[14] Even if the idea of burden is allowed to be retained in the discussion, the exemption remains a very crude way of the removal of the burden. A better way, better for the community and the individuals, would have been to collect the tax first and then to utilise the collection for subsidizing or if necessary for free distribution of input facilities to small farmers.[15] Loss of current consumption would have generated a continuous flow of more output for years to come. The worth of every rupee of tax payment could have been enhanced for the farmers and the supply situation of inputs might be eased a bit. Economic development is not an overnight phenomenon. Today's sacrifice must be balanced against tomorrow's benefits.

A closer look will drive home the fact that the government action under discussion has cost the public exchequer to the tune of Rs. 2 to 3 crores per annum. In easily tangible terms, the loss amounts to two to three hundred energized tubewells, including the transmission costs involved.[16] Collective fund in a single hand is by far superior to the scattered and so useless resources here and there.

In this perspective, the whole question of overall attitude towards agricultural taxation needs scrutiny. Given the objective of greater production, what should be the proper incentive ? Is it higher tax load and consequent drive or more concessions and consequent enthusiasm ? While concessions, as shown earlier, must work in the existing framework of resources, the higher tax load is evidently associated with a broader infrastructure. The present shortage of inputs being continuous, the concessions may be effective only through greater labour or more intensive use of inputs. On an a priori evaluation such effects may at best generate a limited qualitative change. Actually, the labour input is already at the peak of utilisation, sustaining a major degree of suspected under employment between the busy seasons. Again, a continuous effort to economise the use of other inputs, in the face of severe dearth, has perhaps left little scope for any qualitative change. Moreover, the psychological push expected from the concessions, to take a cue from past events, is ill-founded. Concessions or not, when the tax obligation was a low fixed sum of money, the reward of every additional effort would have been left with the farmers themselves. So no new psychological push should be expected from the concessions.

The situation, being as it is, does the reimposition of the tax on the exempted lands look like a disincentive measure ? It is well known that taxes (to be collected from landowners) do not have substitution effects,[17] as cultivating less land does not entitle anyone to a lighter burden. Only income effect falls within the orbit of land taxes. Defensive reactions, aimed at the protection of real incomes, coupled with the better infrastrure facilities, made possible by the tax proceeds, may well enhance the productivity of the community. In fine, fresh imposition of the tax does not militate against higher production rather it paves the way for that.

The amendment of rates on plots of land beyond three acres is a much delayed revision awaited from a long time. Progressive rates form an integral part of a scientific tax scheme. But sudden and carelessly planned amendment has left the scheme far behind than what could have been attained. In fact, it is an outcome of both the delay in revision and ill planning. Timely revision seldom requires an overhauling of the tax-base. But a delayed revision should not be made in such a haste that minimum requirements go unattended. It was absolutely necessary at the time of revision of land revenue rates to reestablish a well defined linkage between the tax base and the rate as during the long period of inaction and inattention this was severed. At the present moment, it is imperative, first to appraise the base properly and then to impose progressive rates of taxation. However, the timely revision should be made an integral part of the scheme, as stressed earlier. Only in this way both the process of slow erosion and the severance of the tax base and rate may be halted. Moreover, the jolt of any threshold effect may be arrested also.

The above analysis appears unassailable so far as the earlier observations on the government motive behind its lethergic activities are concerned. Economic implications do not justify the government actions or inactions. But it is well known that a great majority of voters in this country are wedded to landed interests. Seldom do the voters look after their own interests beyond the immediate future. Consequently, they find the government measures beneficial to their interests, though behind that apparent privilege, they are deprived of a better future. Yet these apparent benefits seem to be secured in the hands of the forces behind the present government. Voters nurture a preference for the status quo in the political field. Economy crawls like a tortoise. Government saves its skin concealing the lack of purposiveness behind the loud cry of paucity of funds. The hope of development recedes far away.

Notes :

1. In a number of states land revenue was either abolished totally or subjected to exemptions partially, particularly since 1967.
2. In West Bengal most of the areas were under the Parmanent Settlement Regulation of 1793—Report of the Taxation Enquiry Commission 1953-54, Vol. III, p. 274.
3. P. Irani observes that rent was 5 times of land revenue on the eve of India's independence,—P. Irani—"Structure and Taxation of Agriculcure in India and Pakistan" in Wald and Froemkin, ed. Agricultural Taxation and Economic Development (1954), P. 385.
4. Contrary to the popular belief of Permanent Settlement rates being arbitrary and baseless, it seems to bear a close connection to Todar Mol's assesment and the reports of prosperity of the areas

prevailing at that time—see the author's Taxation of Agricultural Lands in West Bengal since 1951—An unpublished Ph. D. dissertation of Jadavpur University.

5. See—E. T. Mathew—Agricultural Taxation and Economic Development in India (1968), p. 10.
6. Ultimately all taxes must be paid from either income or accumulated wealth—see F. Lutz—Public Finance (1947), p. 271.
7. According to official estimates, net income from agriculture per acre of net sown area in recent years (beyond 1960) is well beyond Rs. 500.00. Average land revenue (Rs. 5.00) is thus less than 1% of the income from the land.
8. It appears that the Permanent Settlement Regulation took into account the income differentials of different crops and fixed the tax obligations in view of the income potentials of the crops generally grown but profound changes have altered even the soil and climatic attributes of different plots since then. These changes went unaccounted for and as such the relation between crop differential and different tax obligation was lost. See author's dissertation.
9. See Agricultural Commission's Interim Report in Eastern Economist, —March 28, 1975.
10. See P. C. Mathur—'Fiscal Administration' in A Survey of Research in Public Administration (1973), pp. 297-8.
11. See Government of West Bengal's Economic Review 1974-75. There is some validity in the Governments' claim that 'short falls in the supply of chemical fertilizers, of improved seeds and ensuring adequate utilisation of the available irrigation potential' have contributed to poor harvests in the last few years'—write S. K. Rao and P. Patnaik in Economic and Political Weekly March 15, 1975.

    At least during 1974 and probably for several years to come, we will not have the quantity of fertilizer our farmers need'—writes M. S. Swaminathan—Indian Agriculture at Cross Roads—in Everyman's Science—May-July 1974.

    The gap between the potential and the utilisation of irrigation, asserts a sizable section of the farmers in Birbhum, the largest irrigation-fed district of West Bengal, is owing to the uncertainty particularly in seasons other than monsoon months and failure to adhere to a time schedule, on the part of the controling authorities of irrigation projects.
12. Ignore the role of complementarity. By any standard it would be insignificant ; of course C. H. H. Rao thinks otherwise. See C. H. H. Rao in Economic and Political Weekly—Special Number, Aug., 1974.

Table 1

Land Revenue (per hectare of Net Sown Area) as percentage of Gross Income per hectare (in Rs.)

Year	Gross value of Rice :	Land Revenue as % of 2 :	Gross value of wheat :	Land Revenue as % of 4 :	Gross value of gram :	Land Revenue as % of 6 :	Gross value of jute :	Land Revenue as % of 8 :	Gross value of sugar : (raw) :	Land Revenue as % of 10 :	Gross value of Rape and Musturd :	Land Revenue as % of 12 :
1	2	3	4	5	6	7	8	9	10	11	12	13
1951-52	524.40	3.4	414.99	4.3	389.16	4.6	1410.67	1.2	2222.50	0.8	273.28	6 5
1956-57	541.00	1.6	123.63	6.9	180.96	4.7	592.02	1.4	1920.75	0.4	238.74	3.6
1961-62	618.45	1.8	322.93	3.5	179.82	6.3	1102.92	1.0	2536.80	0.4	224.20	5.0
1966-67	1245.90	0.9	732.65	1.5	676.88	1.6	1285.18	0.8	4874.14	0.2	545.01	2.0
1971-72	1884.02	0.5	1986.97	0.5	944.97	1.0	1982.93	0.5	5881.81*	0.2	565.63	1.7

* Relates to 1970-71.

Note : Date on yield rates of various crops have been collected from various issues of Statistical Abstracts and Statistical Handbooks published by the Government of West Bengal.

13. Average land revenue obligation of an acre of land estimated from the collection figures is around Rs. 5.

Even there is a well known and convincing argument against the exemption of lands from taxation. The Madras Land Revenue Reforms Committee observed—'There is an essential difference between land and other means of production. Whereas land will continue, apart from periodical attention to it by way of manuring, almost indefinitely, the other means of production are all wasting assets and would have to be scrapped periodically and replaced by entirely new machinery. Therefore an essential distinction arises between the land and other means of production and this in our opinion would justify a differential treatment. On this ground we would hold that some kind of levy on land is justifiable even in strict theory—The Land Revenue Reforms Committee, Madras, Second Report—quoted in—Joshi, Bhende, Anjanaah—Studies in the Taxation of Agricultural Land and Income in India (1968), p. 201.

14. Land revenue rates were enacted in 1793 on a permanent basis. But rents moved up considerably during all the years up to 1953-54 turning the total burden on the landowners a significant one. But numerous land transfers were completed since then. Land Reform measures, actual or contemplated, also gave rise to a spate of land transfers and in the process, through capitalisation of taxes, the burden paled into insignificance.

See also Due and Friedlaender—Government Finance (1973), p. 462.

Table 2

Trend of Real Income Indicators for Agriculturists

1 Year	2 Index of Gross (W)	3 Index of cost of Living (B)	Index of Agricultural prices (W)	Consumer Price Index for Agricultural Labourers (C)
1951-52	100.0	100.0	100.0	100.0
56-57	89.0	99.8	81.0	112.0 (R)
61-62	111.0	114.2	95.0	109.0
66-67	207.4	170.2	190.5	185.0
71-72	257.0	225.2	227.2	227.0 (e)

Notes : W) Weights given to crops approximate to percentage of area under cultivation. Six crop have been included.

B) Figures are for calendar years with base 1950. Simple average of six centres viz. Balurghat, Bankura, Burdwan, Basirhat, Suri and Contai. Expenditure Group considered relevant spreads from Re. 1 to Rs. 100/- per month.

C) Base 1950-51. Figures relate to calender years

e) Converted from datum with base 1960-61

R) Relates to 1957

Source : Various issues of Economic Review, W. B.

On Profits and Profitabilities of Small Scale Firms

Sarthi Acharya and T. V. S. Ramamohan Rao*

I. Introduction

Studies on small scale firms generally emphasize their dependence on internal funds for capital formation as well as current operations. The situation does not seem to have improved very much even after credit liberalization by nationalized banks.[1]

In a study of production planning in small scale firms, Rao and Acharya (1975) found profits to be the most significant variable though its influence decreases as the size of firm increases. Hence, an examination of the factors which influence profits and rate of profit is imperative to providing guidelines for the efficient functioning of small scale firms.

Our analysis suggests that marketability of the product is the most important factor in the determination of profits. In addition, it was found that the risk of increasing cost of variable factors, inventory management, and capital turnover ratio are important. Therefore, management of fixed assets, production, inventory as well as finances are critically important for the profit planning of small enterprises.

II The Data

Recently Prasad and Rao (1975) collected primary data from firms producing light engineering goods in Uttar Pradesh for an analysis of their employment potential.

The sample firms exhibit vast differences in technology, production-inventory structure, etc. It was observed that there were three distinct size classes based on the stock of capital of the firms. We accordingly disaggregated data into three samples.

Sample 1 : Plant and machinery under Rs. 50 thousand.

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[1] This aspect is discussed in N.C.A.E.R. (1973) and Singh (1970).

Sample 2 : Plant and machinery between Rs. 75 thousand and Rs. 2 lakhs.

Sample 3 : Investment in plant and machinery over Rs. 2 lakhs but less than Rs. 7.5 lakhs.

We have 23 observations in samples 1 and 2 and 15 observations in sample 3.

Same comparative figures are presented in Table I. It was felt that the firms in Sample 1 are pretty isolated and are essentially trying for survival. Sample 2 experiences risks in both acquisition of raw materials and finance. This is partly because the firms have grown large enough to be isolated and yet have not grown sufficiently to have adequate stratagic flexibility. Firms in sample 3 have most of the problems of large scale units.

Table I. Selected Performance Characteristics Averages

S. No.	Feature	Units	1	2	3
1.	No. of firms		23	23	15
2.	Capital intensity	Rs. Thousand/worker	2.75	5.75	12.09
3.	Average variable cost	Rs./Rs. Production	0.64	0.67	0.69
4.	Inventory/Sales	Rs./Rs. Sales	0.06	0.12	0.10
5.	Working Capital/ Fixed Capital		0.68	1.91	0.89
6.	AVC_t/AVC_{t-1}		1.03	1.08	0.98

III. Theoretical Framework

From the above table it is clear that the differences in the technical features, structure of market, and financial constraints are important determinants of profits. To an extent, the uncertainty in the availability of raw materials can be an additional factor in determining profits. Capacity utilization may also be an important determinant in this sense.[2]

The influence of the size of firm on profit rate has been a most popular but highly controversial hypothesis. On the one hand, a larger size enables the firm to take advantage of economies of scale, cushion cost variations in any one branch of operations by offsets in another and, to a certain extent, improve its market dominance. Clearly, each of these factors has a positive effect on profits. On the other hand, as the economies of scale are exhausted managerial inefficiency develops, an increase in size tends to have a profit reducing effect. The general evidence, for other countries as well as India, is that the relation between profits and size is of the inverted U shape. [See Andersen (1967), Mehta (1955), and Whittington (1971].

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[2] In the theoretical literature market structure and concentration are also generally emphasized. See, for instance, Sawhney and Sawhney (1973). We ignore them since they are not relevant to the small firm case. Similarly, small firms do not generally borrow on the capital market. Hence, even liquidity considerations are not dominant.

Technology embodied in a process of production is acknowledged as the second important factor. Its influence is via the cost structure but the effect of this variable on profitability is uncertain. For a reduction in unit cost and, therefore, an increase in profitability is possible only if the increase in productivity obtained by employing a higher capital intensity outweighs the associated cost. Thus, for instance, an inverse relation indicates inefficient use of capital.

The third most important cost variable is risk. There are at least two types of risk experienced by the smaller firms. The costs of acquisition of most of the variable factors have been increasing. Hence, one type of risk is the increased average variable cost of production. Secondly, in the face of increasing variable costs, production planning will be determined by the availability of working capital per unit production. The smallest units do not depend on external finance at all and the relatively large units can attract external funds adequately. Hence, this type of risk with respect to increases in working capital requirements can most significantly impinge upon the profitability of firms in sample 2. This is so because, small firms do not have market control to transfer cost increase to the consumer. Consequently, an increased cost would mean that most or all the incidence is to be borne by the producers.

In the short run, and especially for small firms that cannot have a steady demand and do not have the capacity to manipulate it, the externally determined sale is critical in defining the profits that they make. The demand factor is therefore one of the important determinants.

We note further that unintended inventory accumulation indicates slack demand and with a positive elasticity of expectations, a reduction in the volume of production is likely to emerge. Unsold inventory not only increases the cost of holding it but also represents a loss of interest on the finances used. One could argue that an increase in inventory, at least in the initial stages, may smooth out the differences between sales and production and may contribute to reduction in adjustment costs with a consequent increase in profits. However, it is obvious that a negative sign would indicate excessive inventory holding and an inefficient inventory management.[3]

The capital turnover ratio—sales to fixed assets—is the last variable we consider. This ratio can generally reflect the efficiency in the use of fixed assets in relation to production management. Hence, we ought to expect an increase in this ratio to result in an increase in profitability at least in the long-run.

IV. Empirical Findings

The following concept of cost is adopted in calculating profits : (1/12) total fixed assets+wages and salaries+raw materials+utilities.[4] We then used total profits π_t as a short-run measure and the ratio of total profits to total fixed assets π_t/TFA_t as a long-run measure of profitability.

Consider the results for π_t first. For sample 1, the market demand, as reflected by S_t, is the most important determinant.

$$\pi_t = 6.71 + \underset{(8.94)}{0.25\ S_t},\ R^{-2} = 0.79$$

(Numbers in the brackets are t—values)

In addition to this, the results indicate that these firms experience financial problems, especially in regard to working capital and use the fixed assets inefficiently. These are obvious from the following regressions :

$$\pi_t = -4.46 + \underset{(9.56)}{0.25\ S_t} + \underset{(2.04)}{43.41\ \frac{\text{WC}_t}{S_t}},\ R^{-2} = 0.82$$

$$\pi_t = 22.32 + \underset{(8.77)}{0.24\ S_t} - \underset{(1.75)}{2.32\ \frac{\text{TFA}_t}{\text{TNW}_t}},\ R^{-2} = 0.81^{5}$$

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[3] To an extent, an increase in the inventory turnover ratio indicates an increase in demand for working capital which in turn has its effect on profitability.

[4] The capitalization ratio of 1/12 is the convention prescribed by the Annual Survey of Industries. It may not be adequate for small firms, however.

[5] It was observed that though the simple correlation between $\frac{\text{WC}_t}{S_t}$ and $\frac{\text{TNW}_t}{\text{TFA}_t}$ is 0.32, both variables were insignificant when included

Sample 2 behaves somewhat differently. We found in our study on production planning that firms in this sample indicate a more conscious forward planning and have much greater flexibility to adjust production. However, the risks involved are very high. The profit behavior is entirely consistent with this. For we find

$$\pi_t = 589.01 - 390.28 \frac{AVC_t}{A_tC_{t-1}} - 9.54 \frac{TFT_t}{TNW_t} + 0.19\ S_t,\ R^{-2} = 0.76$$

$$(3.04) \qquad (2.22) \qquad (4.84)$$

where $\frac{AVC_t}{AVC_{t-1}}$ is the variation in average variable costs over time,

and $\frac{TFA_t}{TNW_t}$ is the capital labor ratio reflecting the technology.

The following observations are pertinent : (a) market demand is important even in this case, (b) the nagative sign on $\frac{TFA_t}{TNW_t}$ indicates that capital is being used very inefficiently. Hence, what appeared to be production flexibility in this sample is a disadvantage to firms in so far as it is impinging on profits, and (c) the cost risk experienced by these firms is considerable.

It turned out that in the case of the third the sample inventory management is the critical factor. For, the best regression for this sample is

$$\pi_t = 169.4 - 0.30\ S_t - 1596.68 \frac{I_t}{S_t},\ R^{-2} = 0.73$$

$$(5.38) \qquad (3.28)$$

where $\frac{I_t}{S_t}$ is the inventory to sales ratio. This result is also consistent with our earlier findings, For, it was noted that the cost structure of these firm is such that they have to maintain a certain level of production to ensure that a good part of the costs is covered. And this is without reference to market conditions. Hence, these firms experience marketing problems and unintended inventory accumulation.

The results for the behavior of long-term profitability follow a similar pattern :

Sample 1 : $\frac{\pi_t}{TFA_t} = 0.05 + 0.27 \frac{S_t}{TFA_t},\ R^{-2} = 0.84$

$$(10.41)$$

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simultaneously. The model discrimination problem is quite difficult at this stage.

$$\frac{\pi_t}{TFA_t} = -0.12 + 0.71\,\frac{WC_t}{S_t} + 0\,27\,\frac{S_t}{TFA_t},\quad R^{-2} = 0.87$$
$$\qquad\quad (2.37) \qquad (11.66)$$

$$\frac{\pi_t}{TFA_t} = 0.30 + 0.26\,\frac{S_t}{TFA_t} - 0.04\,\frac{TFA_t}{TFW_t},\quad R^{-2} = 0.86$$
$$\qquad\quad (9.86) \qquad (1.87)$$

Sample 2 : $$\frac{\pi}{TFA_t} = 1.81 + 0.19\,\frac{S_t}{TFA_t} - 0.03\,\frac{TFA_t}{TNW_t} - 1.08\,\frac{AVC_t}{AVC_{t-1}},$$
$$\qquad\quad (2.37) \qquad (1.79) \qquad (2.34)$$

$R^{-2} = 0.52$[6]

Sample 3 : $$\frac{\pi_t}{TFA_t} = -0.24 + 0.46\,\frac{S_t}{TFA_t} - 2.15\,\frac{I_t}{S_t},\quad R^{-2} = 0.86$$
$$\qquad\quad (8.12) \qquad (2.57)$$

The most important observation is that the capital turnover ratio is the most important deteminant of profitability. Other influences are the same in both short run and long run.

V. Conclusion

The contribution of this paper lies in its emphasis on the aspects of internal management of small firms to generate profits successfully. We found, in our earlier study on production planning, that this is in fact vital for efficient operation of small firms. In particular, we find that attention must be directed to making raw materials available at a reasonable price, inventory management and capital planning with a view to ensuring full utilization of capital.

References

1. Andersen T. A., The Effect of Size on Profits in Manufacturing Industries in I. Pfeffer (ed.). The Financing of Small Business : A Current Assessment. (New York : McMilian Company, 1967).

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[6] The low value of R^{-2} here relative to short-run behavior indicates that there are some other variables which we could not quantify. For instance, as the result suggests, unless these firms can out-grow the bottlenecks either by further adjustment over time or expansion, the profitability would remain low.

(Continued on page 304)

The Causes of Educated Unemployment in India

Asok Kumar Chakraborty*

Educated unemployment which is bete noire to all has thrown no less than four million unfortunate Indian people into utter economic confusion. "The want of occupation", writes Rousseau, "is no less the plague of society, than of solitude."

Our defective educational system is mainly responsible for this sort of situation. The Bengal Unemployment Committee rightly remarks that one great defect of the educational system is that it leads to one end only. It is, a la the Committee, like a bamboo which has no branches and the crowning up covers a very small area. Our educational system is extremely burdened with general educational bias and neglects the vocational side. It is outmoded and not attuned to the needs of the society. Dr. Atma Ram, ex-Director General of the Council of Scientific and Industrial Research, rightly said that the problem of unemployment had emerged from the mismatching of academic progress and economic growth. The rate of increase of the number of educated personnel is outrunning that of economic growth. The real economic situation and need of the country are paid little heed by the worn out educational system. But Mr. L. K. Jha, ex-Governor of the R.B.I., said that "education and economic development have a chicken and egg relationship." Dr. Gunnar Myrdal, the renowned Swedish economist, truly says that the present educational system is unsuitable for the development of the country. It follows the pattern of education in the colonial times. Students are sent abroad for higher studies in science and technology. But when they come out of their institutions they become quite unsuitable for the Indian conditions. Prof. Philip Coombs of the International Council for Education Development similarly writes, "Much of the education has low productivity. Its content is often obsolete or otherwise ill-fitting, frequently because it was transplanted wholesale from a very different environment. The result is that people spend a great deal of time in teaching and learning the wrong things". Dr. Louis Levine, the renowned American economist, is reported to have remarked that one contributing factor to the explosion of educated unemployment is an utter lack of co-ordination and economic requirement. There is an acute imbalance between the turn-out of our engineers and their absorption by the industries. Dr. S. N. Sen of the Calcutta University is reported to hold that the democratic system of Government itself is responsible for such a state of affairs. This kind of situation is quite natural in a democracy in which the number of required persons under training and the number of persons actually required in a particular type of job cannot be determined. Prof. Colin Clark, the renowned British economist, says, "The Indian Educational system is seriously unbalanced...." Rapid growth of population is its main originating cause. It has inevitabiy led to the mushroom growth of educational institutions which has unbalanced the educational structure. Dr. V. K. R. V. Rao has warned that India would have to live with the problem of growing population for the rest of the current century. Our development efforts are en verite nullified by the tremendous growth of population. We are laying out crores of rupees on birth control measures. But recent United Nations Studies have shown that the notion that propulation growth can just be tackled by birth control is to be discarded. Mahmood Mamdani's valuable study has thrown spotlight on the dismal failure of the big birth reduction compaign launched by the Indian Government and the Ford Foundation in Indian villages. The University Grants Commission has expressed that much of the higher education in our country is not appropriate for the requirement of the developing economy. Our students do not get the right type of occupational direction from their education. Most of the employment information and guidance bureau in our universities are not manned by right persons. Sufficient publicity is also not made of them.

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* Calcutta.

The problem of educated unemployment has also emerged from the unwillingness of a significant percentage of our educated people to accept rural employment. An all-India survey conducted in 1970 by the Directorate General of Employment and Training, Government of India, shows that 30% of our jobless persons are not ready to leave their home towns. They simply build castles in the air. Most of our doctors, though face acute unemployment, are unwilling to go to villages. Unhealthy living conditions, difficult communication, ill-equipped hospital centres, etc., dishearten them. But beggars must not be choosers.

There is unduly an ever-increasing rush for higher education in India. In Australia, for example, only 20% of the students who pass the school leaving examination are allowed to go in for the four year degree courses. The remaining 80% are turned aside to services and professional jobs But in India a critical situation has been brought forward by a tremendous rush for higher education and overproduction in universities. In 1947, only 20 universities and 625 affiliated colleges existed in India. In 1971-'72, their numbers jumped to 95 and 3897 respectively. Only 265,917 students were on the rolls for higher education in 1947. In 1971-72, 3,200,000 students were enrolled for the said purpose. Prof. Colin Clark has highly depreciated such tendency. He has disapproved the existence of relatively too many universities and too few primary schools in India. A study conducted in 1970 by the Institute of Applied Manpower Research on "employment outlook for engineers" has shown that the increased unemployment among engineers is partly due to the increase in admission to technical institutions. This state of affairs will continue unless degrees are delinked from employment.

If the economy cannot grow at a very high rate, sufficient number of vacancies for the educated unemployed cannot be brought into being. Statistics demonstrates that the rate of growth of national income in India has been more or less decelerating. During 1951-'60 and 1961-'70, the rates of economic growth were 3.8% and 3.7% respectively. The growth rate averaged between 3% and 3.5% during 1969-'74. The years 1969-'70 and 1970-'71 recorded 5.3% and 4.2% rates of growth of national income (at 1960-'61 prices). But the growth rate fell off to 1.7% and 0·4% in 1971-'72 and 1972-'73 respectively. (In 1973-'74 however, the growth rate rose to 4%). There is a positive correlation between economic growth and employment. Larger employment implies larger growth. According to the Pearson Commission a developing country can have a 4% to 5% growth rate. The Planning Commission is of the view that a 5% to 6% growth rate is essential and also possible for India. Therefore, India's present position is disappointing. Her industrial growth rate also is a baffling one. During 1951-'56 and 1956-'61, the industrial growth rates were 7.5% and 6.6% respectively. The rate fell off to a horribly low level of 0.3% in 1966-'67. It was only 0.5% in 1967-'68. Though it improved to some extent in 1971-'72 by rising to 4.5%, again fell off to 2.5% in 1972-'73. But it became only 0.5% in 1973-74. There is, practically, a stagnation in the industrial front. Dr. V.K.R.V. Rao has rightly said that this industrial stagnation is partly responsible for the growing unemployment in India. Frequent utterances of the slogans of socialism have become harmful to the growth of industries in the private sector. It has given rise to an uncertainty and thereby impeded economic growth. Prof. C. Northcote Parkinson is reported to have rightly criticised the introduction of mixed economy in India. He has reportedly said that it is unfortunate that nationalisation started here before the full development of industrial growth has suffered from a defective investment pattern. Labour intensive projects have not been worked on adequately. Dr. Louis Levine is reported to have lamented over that the optimum utilisation of manpower in industry is still a long way off. He reportedly justly criticised the part played by India's private sector in producing opportunities.

Educated unemployment problem has issued also from our imperfect planning. The deficiency of our Five Year Plans and the unscientific accomplishment of our different schemes have brought in an increase in the number of educated unemployed. It is correctly stated that the real crisis of Indian planning consists in the crisis of implementation. Mr. R. C. Dutt writes, "...the bulk of the civil service is manned by persons who have been brought up in a different set of values, the values of individualism, "free enterprise", the classical or neo-classical economic doctrines, who, to say the least, have genuine doubts about the values which they are called upon to accept and implement in their day to day work". "...a very large number of our politicians", writes Mr. Dutt, "...are highly conservative in outlook. The result is that in the process of implementation the radical elements of policies are watered down ..". Dr. R. N. Banerjee of the Burdwan University has rightly commented. "It is a real tragedy in planning drama that very often the divergence between ex post approach disintegrates the entire plan." The investment employment ratio fell over the five year plans. In the first two five year plans, an investment of Rs· 10,191 crores gave employment to 17 million people. But in the third five year plan, a relatively big investment of Rs. 10,400 crores gave jobs to only 14.5 million persons. There was no expansion of employment during the three annual plans of 1966-'67, 1967-'68 and 1968-'69. In the fourth five year plan a massive investment of Rs. 22,635 crores yielded employment to only

14 million people. S. P. Agarwal and P. Rao (25) have rightly stated that "the employment aspect of our planning is its weakest link". The Pearson Report points out that as no large scheme for building up adequate infra-structure has been prepared, such a problem of huge dimension has inevitably cropped up. Our planners have as good as neglected manpower planning. They have perhaps forgotten H. W. Beecher's saying that "Occupation is a necessity to the young." A group of economists has expressed the opinion that the Planning Commission has so far not undertaken a serious operational exercise in manpower with its demand. No serious efforts have been made to "establish closer link between the pattern of education on the one hand and the needs of development market on the other". The "plan holiday" of three years (1966-'67 to 1968-'69) was harmful. It accentuated the educated unemployment problem. The malady lies in the mismanagement of the economy, policy formulation being unrelated to administration's effective capacity and too much power in economic matters being concentrated in the hands of the Government. The recent study of Dr. Panandikar and Mr. Khirsagar has brought to light that almost 50% of our civil servants are not result-oriented. Our IAS officers are appointed to those posts which are most suitable for technical people. In the industrial sector, science graduates are generally preferred to engineers and given employment in larger number.

Too much cost consciousness of our industrialists has brought in modernisation, rationalisation, automation, etc. Consequently, many educated persons have been retrenched. The necessity of augmenting exports is compelling them to think more and more in terms of economising by reducing the number of staffs.

Widespread educated unemployment has also come of the large scale import of foreign technology (which is capital intensive). Dr. Gunnar Myrdal is reported to have depreciated the tendency of sending our students abroad for learning foreign technical knowhow which would make them unfit for the conditions obtaining in India. Foreign technology is "tailored" to the requirements of foreign countries where labour is in general relatively scarce. We should invent our own technology "tailored" to our own requirements.

Hindrances to self-employment have created an impasse and held up our engineering graduates to fall to small undertakings. The inability of the Government to remove the severe scarcity of the necessary raw materials, the time-wasting process entangled with getting clearance of different schemes and applications, the absence of the market valuation of the scheme in its proper perspective, the possibility of loss in the atmosphere of speedy development of modernisation, incapacity to meet the general course of demand patterns, the job complex of engineers and the indifference of the Government are some such hindrances mentioned by Mr. K. L. Nanjappa, ex-Development Commissioner, Small Scale Industries, Government of India. Lastly, economic development itself has been a major cause of increase in educated unemployment. Industrialisation has led to "more education for villagers" which has made them "dissatisfied with the village and unwilling to return to it, adding to the educated unemployed in the city".

(Continued from page 298)

2. Barthwal, R. R., The Determinants of Profitability in Indian Textile Industry, Manuscript, 1975.

3. Lall, U. D., Taxation and Profitability : A Study of Business Houses, Economic and Political Weekly, August, 1969, pp. 1919-1929.

4. Mehta, M.M., Structure of Indian Industry (Bombay : Popular Book Depot, 1955).

5. N.C.A.E.R., Study of Selected Small Industrial Units (New Delhi : National Council of Applied Economic Research, 1973.)

6. Prasad, K., and T.V.S.R. Rao, Employment Potential of Selected Manufacturing Industries in Uttar Pradesh, Report submitted to I.C.S.S.R., January, 1975.

7. Rao, T.V.S.R., and S. Acharya, Production Planning in Small Scale Firms, Manuscript, 1975.

8. Sawhney, P. K., and B. L. Sawhney, Capacity Utilization, Concentration, and Price-cost Margins : Results on Indian Industries, Journal of Industrial Economics, Vol. 21, No. 2, April, 1973, pp. 145-153.

9. Singh, N. N., Scientific Management of Small Scale Industries. (New Delhi : Lalwani Publishing Company, 1970).

10. Whittington, G., The Prediction of Profitability (London : Cambridge University Press, 1971).

Regional Biases in the Federal Open Market Committee, 1950-1961

Berch Haroian*

Introduction

Among the responsibilities of the Federal Reserve System is the control of open market operations and hence bank reserves available for loans at the nation's commercial banks. This process has been carried out by the Federal Open Market Committee (hereafter called the FOMC) since its creation in 1933. The FOMC's composition includes the members of the Board of Governors of the Federal Reserve System, the President of the New York Federal Reserve Bank and four presidents of the eleven other Federal Reserve Banks, who serve in rotation. With the passage of time the FOMC control of open market operations has become the chief instrument of national monetary policy.

Intent

It is the intent of this study to examine the membership and voting patterns of the FOMC to uncover the existence of any personal or regional biases which have affected the determination of national monetary policies. Other studies have hinted at the existence of such biases. In the March 27 1956 FOMG meeting, the Chairman, William McChesney Martin remarked

> that one of the problems in arriving at group decisions was the attitude or approach that individuals took. Over a period of time we come to know that some of us lean to "hard money" and some lean to the "easy money" view, and some neither. There are some who lean to the status quo and some who lean to experimentation. Each of us ought to analyze ourselves as individuals.

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It seems evident then that this study, intended to reveal such biases, is warranted.

Technique

The twenty-one discount rate changes which were effected from 1950 to 1961 were first divided into thirteen increases and eight decreases. Based upon FOMC minutes, each comment made by each member was recorded and classified as falling into one of four categories, "Recommended", "Mentioned", "No", and "No Opinion". Because of the different numbers of opinions stated by the members, each category was then presented as a percentage of that member's total expressed opinions. Then, within each category, the opinions were further subdivided to show at which of three meetings prior to the actual change that opinion was stated. This produced a Time-Comment Matrix, useful in determining not only general inclinations, but also leadership.

Consistent and inconsistent biases were identified. These biases were tested by an unweighted chi square test. Leadership was tested in a weighted chi square test. To further test bank attitudes, a study of opinions on Free Reserves changes (similar to the above study on discount rate changes) was conducted. Further confirmation or rejection of the existence of biases was sought in a study of the actual operation of discount windows at Federal Reserve banks before, during, and after the discount rate changes. Finally, other research was consulted to shed further light upon the FOMC.

Results

In examining the aggregate, percentage, and Time-Comment Matrix data, we discovered that there appear to be few anticipatory changes in decreases of the discount rate but many in increases. There is an interesting condition existing among the Governors which must be noted here. They meet more frequently, and perhaps due to this fact, they present a more uniform position of FOMC meetings. Then too, the Chairman reports last, and attempts to summarize the group position. The Chairman may, then, act as the conciliator, joining the majority position. This unanimity was the hallmark of the Chairman, William McChesney Martin, and has become known as the "Martin Consensus".

The aggregate vote analysis reveals that Boston, Cleveland, Dallas, Kansis City, Governor Robertson, and Governor Balderston favor increases. Two banks clearly favoring decreases are Philadelphia and St. Louis. Governors Vardaman and Balderston also favor the decreases. Because four categories existed, it was possible for a member to be both for and against a change, or for both changes. For that reason, the aggrgeate findings were classified into the biases below.

Bias A : Those banks and governors that favour increases and that are also opposed to decreases.

Bias B : Those banks and governors that favor decreases but are also opposed to increases.

Bias C : Those banks and governors that favour increases but *do not* oppose decreases.

Bias D : Those banks and governors that favor decreases but *do not* oppose increases.

Biases A and B appear to be consistent, while biases C and D appear to be inconsistent.

Utilizing the time-comment matrix, banks, 50% of whose opinions were cast three meetings before the change, are identified as leaders (L). Those banks registering 50% of their opinions in the last meeting are identified as followers (F). All others are considered neutral. A chart of the biases follows :

Biases	Federal Reserve Banks	Governors
Bias A	Boston (F), Dallas (F), Cleveland (F)	Robertson Shepardson (F)
Bias B	none	Vardaman* Szymczak*
Bias C	Kansas City (F)	Martin (F) Mills (F)
Bias D	Philadelphia (F), St. Louis (F)	Balderston (F)
Neutral	Atlanta (F), Chicago, Minneapolis, New York, Richmond, San Francisco (F)	none

* =not classified due to the fewness of votes (F)=Follower.

We have now uncovered the fact that six banks and all the Governors have unusual voting patterns and are not neutral. Eight banks are followers ; none are leaders. Five Governors are followers, one is neutral, and two cannot be placed due to paucity of opinions. These unusual voting patterns may be called biases.

The chi square test of variance was used to further identify banks and governors with biases. A 5% level of significance is employed in a comparison of the expected (fe) and observed (fo) values. Chi square values greater than 5% reduce the possibility that the observations are a result of pure chance. The chi square results were modified to exclude those Governors and banks with too few opinions to be valid. The Boston and Cleveland banks tested significant for increases. Governors Robertson, Shepardson, and Mills tested significant for increases, and Governor Vardaman tested significance for decreases. These results further verified the results of the earlier research.

A weighted chi square test was devised to verify timing results. The results showed that the Boston, Cleveland, Dallas, and Kansas City banks tested as significant, and that San Francisco was significant, but a follower. Governors Robertson and Mills appeared as significantly favoring increases over decreases and as being leaders. These findings again further substantiated, in part, the findings of the earlier research.

For further confirmation, a test of FOMC member votes for changes in Free Reserves was conducted. The votes were classified as favoring "Ease", Restraint", "No Change", and "No Opinion". In general, the findings of the tests for free reserve increases and decreases provide partial support for our previous findings. The Federal Reserve Bank of Dallas and Governor Robertson had no votes for restraint. Dallas, along with Governors Martin and Shepardson were most in favor of decreases of Free Reserve. All four (Dallas and Governors Robertson, Martin, and Shepardson) have been noted previously as having unusual voting patterns.

An examination of discount windows the month before, the month of, and the month following a discount rate change did *not* positively confirm regional biases, but it also did not exclude their existence. Too many other factors exist which influence the actual operations of the discount window to enable any definitive conclusions to be drawn. Among these influencing factors are the following: (1) a bank's earlier refusal experience at the window, which would make it reluctant to be refused again ; (2) a bank's withdrawal of an application which would not appear in the statistics, as would an official refusal ; (3) applications made further in advance of the change, which would not appear in this test, and (4) the increasing reluctance of a bank to borrow as the spread between treasury bill rate and the discount rate increases.

In research done by Hobart Carr in 1960, and published in the *Journal of Finance*, banks were classified into three groups, depending upon the length of time each one took to confirm the new rates set by the Board of Governors. Five banks were identified as leaning toward "anti-inflation" moves. These were San Francisco, Cleveland, Minneapolis, Kansas City and Dallas and San Francisco was identified as a follower. Thus, Professor Carr's research tends to support the existence of unusual voting patterns.

Summary

We will assume that biases should appear in at least half of the examinations and test utilized. Therefore, the statistics reveal that the Boston, Cleveland, Dallas, Kansas City and San Francisco banks have significant voting patterns in three or more of the tests, as do Governors Mills, Robertson, Shepardson, Szymczak and Martin. Boston and Kansas City appear as leaders, while San Francisco is a follower. These banks and governors have statistically notable biases which favor restrictive moves.

Conclusions

Acknowledging the existence of biases, and determining the causes and effects of those biases are different matters. From the research and tests made, we have noted discernible upward biases. We must now attempt to determine their causes, natures, and, if possible, evaluate the effect of these biases on national monetary policy.

If a bias is personal it is to be assumed that when a bank President's term expires, there should be a change between his voting patterns and those of his successor. There were many changes of personnel during the 1950-1961 period, but none of those changes brought significant changes in bank's voting patterns. The biases, then, were not personal.

A bank President is appointed by the Board of Governors upon the recommendation of the Board of Directors of that bank. The Board of Directors would not recommend, nor would the Board of Governors appoint a man whose interests and inclinations were inimical to their own. All nine directors of each bank are from the region in which the bank is located. They are largely bankers and industrialists who are dependent upon the banks for funds. Therefore, they form a regionally-oriented group, and it may be concluded that the President recommended by the directors would (be regionally biased) reflect the concerns and interests of the region.

The regional biases exhibited by Cleveland, San Francisco, Kansas City, Dallas and Boston may be connected to the population and per capita income changes in those districts during the 1950-1961 period. Cleveland and San Francisco were undergoing strong expansionary pressures brought about by rapid population increases during this period. They needed to attract new capital. Therefore, their biases toward increasing discount rates is understandable, since the increasing rates should attract the capital they needed. Kansas City and Dallas had unique conditions which may have resulted in capital shortages which would have been alleviated by increased rates, which would attract to them capital from outside the district. Boston was not in an expansionary period. On the contrary, with many textile firms leaving the area, Boston was in a decline. It may be that Boston's banks were investing in the growth areas outside the district, which would have made Boston's interests coincide with those of the other four banks.

We have now established that biases exist, that they are not personal in nature, and that they may be regional. We have yet to determine the effect of these biases upon FOMC decisions which determine national monetary policies. Kansas City and San Francisco rotate in FOMC decisions which determine national monetary policies. Kansas City and San Francisco rotate in FOMC meetings with Minneapolis. At best, one of them serves as one of the four rotating voting members. If at one time the other voting banks were Cleveland, Dallas, and Boston, that would still account for only four regionally-biased bank votes on the twelve member FOMC. While we can find a clear inclination for restrictive policies in FOMC deliberations, we cannot attribute those FOMC actions which result in national monetary policies solely to regional biases.

In conclusion, then, we must state that while regional biases have been demonstrated to exist, they do not determine national economic policies as formulated in the Federal Open Market Committee.

(Continued from page 280)

hectares of land. Proven underground water resources will be immediately harnessed and further surveys taken up for irrigation and for the provision of drinking water, especially in drought-prone areas.

The power position has somewhat improved. Action is being taken to generate a further 2600 megawatts and adequate funds are being provided to implement power projects. For long term needs, super-thermal stations under the Central Government are being planned. State electricity boards are being streamlined.

The handloom industry is next only to agriculture in the number of people employed. Supplies of inputs will be ensured to weavers at reasonable prices. A separate development commissioner for handlooms is being appointed. The policy of reservation for handlooms is being rationalized to give greater protection to weavers.

In the mill sector, the controlled cloth scheme is being improved, so that dhotis, saris and cloth will be of better quality and are sold through a larger number of outlets in rural and urban areas.

Fortunes have been made out of urban land at the nation's expense. Speculation in land and the concentration of urban property have led to glaring inequalities and to a great deal of haphazard urban growth. Legislation is being initiated to impose ceilings on the ownership and possession of vacant land, to acquire excess land, to restrict the plinth area of new dwelling units and to socialize urban and urbanisable land.

Tax evasion is a crime. A great deal of black money so evaded goes into luxury housing. Urban property is grossly under-valued. Special squads will be set up forthwith to take up property valuation. Punishments will be stern. We are thinking of summary trials.

Our campaign against smugglers will be intensified. It was thwarted by their release on technical points. In some cases they even got anticipatory bale. The properties of smugglers will be confiscated whether held in their own name or benami.

Licensing procedures have come in the way of new investment, causing delay. These will be simplified. The investment limit of those industries which need no imports or Government help, will be raised.

At the same time I must point out that licences are being misused. Import-export regulations are being amended. There will be speedy trials, and penalties for breaking rules will include the confiscation of goods.

Schemes for workers' participation in industries particularly at the shop floor level and production programmes will be introduced.

The movement of foodgrains, coal, steel and cement by railways has improved in the last few months. Constraints on the movement of goods be removed, for this purpose, we are introducing a system of national permits.

Fixed Income Group

People with fixed incomes have suffered severe hardships in the last few years. They need immediate relief. The minimum exemption limit for income-tax will be raised from Rs. 6.000 to Rs. 8,000.

Students from poor families face special difficulties if they pursue higher studies away from their homes. To help them essential commodities will be supplied at controlled prices to all hostels and approved lodging houses.

Another important measure in the educational field will be to ensure that text books and stationery are available at reasonable prices to all school, college and university students. Prices will be strictly controlled and book banks established.

As one of the measures to increase employment opportunities for educated young people, the Apprenticeship Act will be suitably amended so that managements in the organized sectors of our economy take a larger number of apprentices for a specified period. Special care will be taken to ensure a fair deal to scheduled castes and tribes, minorities and handicapped persons in the recruitment of apprentices.

I have only briefly outlined various parts of the new programme which will be taken up in the coming weeks. Other matters are being looked into and further measures will be announced from time to time. I have no doubt that together they will make a difference to the country's economic outlook. What is most urgent is that collectively we should shake off any sense of helplessness. The worst feature of the crisis which was building over the last few months was that it spread cynicism and sapped national self-confidence. There is a chance now to regain the nation's spirit of adventure.

ECONOMIC AFFAIRS

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Muddle in World Food Market

It is reported that Soviet peasants are feeding bread to the cattle while Kremlin is dipping into its gold reserves to buy USA grains. Reported further that Soviet harvests this year will fall short of the target by about 20 million tons. This has made Soviet to buy 12.5 million tons of grains from USA, Canada and Australia, and of it, it appears, some 10 million tons from USA alone, which is reported to have a bumper harvest that can satisfy her export needs.

Dependence of Soviet on USA grains is not a new phenomenon. 1972 was a year of acute crisis in world food production. Hard pressed and taking advantage of the general worldwide scarcity of cereals Soviet secretly entered into a wheat deal with USA and bought 19 million tons of wheat at a "low price subsidized by the USA taxpayers" and at the expense of the USA consumers. This at once made the world price of cereals shoot up at the dismay and distress of the poor countries ; India not excepted. (She was however partially compensated by Soviet resales to her). Needless to say that the spurt in food prices helped strengthen the worldwide inflationary force.

1973 had a better harvest although not sufficient to stop further depletion of the level of stocks or to moderate the rise in food prices. 1974's world food demand had therefore to depend entirely on that year's production. The production was however less than expectations. Consequently in 1975, for the third time in succession, the world food supply was dangerously dependent on the current year's production.

It was expected that what was done by Soviet in 1972 would not have the repetition, at least for humane consideration, this year. Fact has denied this. She has repeated her performance against the consensus of Rome World Food Conference that all countries should co-operate to devise effective steps to deal with the problem of stabilizing world markets. Interestingly, Russia, which was once one of the major grain exporters, since the communist regime has been an absolute lagger in food. Stalin made Russia starve to balance the demand and supply of food. But the fact remains that there is enough scope for reorganizing her agricultural economy, a point which was taken up by the Rome Conference with all seriousness: "Of prime importance for the attainment of these objectives (to remove the obstacles to food production and provide incentives to agricultural producers) are effective measures of socio-economic transformation by agrarian, tax, credit and investment policy, reform and reorganization of rural structures, such as the reform of the conditions of ownership..." The inner meaning of this recommendation is that the communist countries should restructure their orthodox economy to feed themselves and also to help feed the developing countries, which require time to develop their agricultural resources.

USA is not less guilty in flouting the recommendations of the. Rome Conference. The Conference emphasized that the "developed countries should take into account, as far as possible, the interest of the food exporting developing countries, in order to avoid detrimental effect on their exports." Thailand has some 300000 tons of last year's surplus of rice at her back and a likely addition of some 1.5 million tons of exportable surplus this year. USA has planned to drop some 500000 tons of rice in Asian market. This very information has instantly caused the price of rice to be down from $ 625 a ton to $ 350 a ton. It is also reported that 50000 tons of USA rice have gone to Soviet via Singapore at a price of $ 200 a ton. All this has put Thailand at a cross. China has taken advantage of this. She has agreed to buy 200000 tons of Thai rice at a "friendly price" although she has 60 per cent of her rice production to export this year. Ostensibly her generosity is to show the poorer countries that she can be depended as a trading partner. Call it politics, but it has some moral value; economic stability apart. In this respect however China too has overreached the recommendation of the Rome Conference which states that aid should go to dovetail the development programmes and not for any other motive.

Rome Conference has said many things and wished for many more things. But all seems to have fallen on deaf ears of the super powers, who know only their own interests and know how to play politics with food and coerce a poor country to think and act in terms of a set ideology. Had it not been so the price rigging of the basic inputs would not have gone to that length as to raise the price of cereals by 150 per cent and the price of wheat by 100 per cent within a small period of July 1972 to July 1973 and by another round of about 100 per cent during the second half of 1973.

Review

Agrarian Crisis in India: The Case of Bihar, F. Tomasson Jannuzi, Sangam Books, Orient Longman Ltd, Calcutta, Price Rs. 33.00.

A product of intensive field works the present book reviews the causes, nature, depth and cures of agrarian problems of Bihar in the broader context of India's rural economy. Dr. Jannuzi starts right from the pre-independence India to trace India's attitudes to land reforms. He found the unwillingness of Congress' to make explicit its land policy presumably because "Gandhi was also closely associated with the landed middle classes and large industrialists, particularly Marwari and businessmen, the principal financiers of the Congress movement." He seems to have overemphasized the factor in party finance. Gandhi and Netaji Bose had some common approach regarding the functional classes as distinct from Marxian's dogmatism to see social dynamism only through the leadership of workers.

A revealing feature of the book is the role of landed interests in blocking the legislative attempts for reforming the status of the peasants and increasing the productivity of land. As far back as April 27, 1947 no less a person than Rajendra Prasad chastised the then Bihar Revenue Minister, K. B. Sahay, "for moving so rapidly in the direction of zamindary abolition legislation without consulting adequately the Congress Working Committee." Prasad was seemly against any sweeping measure for land reforms. For it amounts to, to quote him, "forcibly dispossessing people of their property before they have been compensated." This attitude of the leaders was reflected in the Bihar Land Reforms Act 1950 and the amending acts of 1954 and 1959 which had but anything in themthat could be said to have considered the interests of the landless labourers or "bataidars" (sharecroppers). Zamindars' incomes were however miserably reduced. And they had been hard pressed to maintain their earlier standard of life. This gives a start to cultural and economic changes in rural areas.

What were the rural reactions to Zamindary abolition ? Dr Jannuzi's research shows there had not been any evidence that specific information regarding the meaning of agrarian reforms legislation has ever been disseminated purposefully in rural areas of the state by the government of Bihar. So no enthusiasm was shown by the commonman to what the Government had been doing for them. The village elders were rightly held the opinion that "condition is one of not having enough in our bellies to have strength to be concerned about our position. Lower wages for labour, higher rent for land—these make little difference. We are already poor."

Reviewing the points for and against land ceiling Dr Jannuzi reviews its .effect on Bihar rural economy and concludes that by "establishing variable ceilings and allowing the landholder to resume lands from his tenants for "personal cultivation", the act permitted the eviction of thousands of under-raiyats or tenants from lands they had tilled for many years..." On Bhoodan Movement he is still more explicit. In his own ways he has analysed the movement and arrived at the point that the "movement of Bhava and Narayan is seen increasingly as simply irrelevant."

Reactions to exploitation are bound to take their own courses. Agrarian tensions came up to surface. The communist inspired national land grab movement was launced by the CPI and its associates which shortly entered into another phase of struggle for liberation : "Two thousand armed men, said to be Naxalites, the most militant pro-Peking segment of India's fragmented Communist Party, attacked the holding of a landlord of Bhagalpur District and forcibly harvested thirty-one bighas of standing crops." The reactions were that "On August 3 an anti-Naxalite meeting was held in Jamshedpur under the auspices of the Jana Sangh, and a twelve-foot effigy of Mao was burned to climax the occasion." The caste-riddled Bihar was in fermentation. Dr Jannuzi warns : "If the ruling elites fail to respond to the legitimate interests of the Bihar peasantry, they risk losing all opportunity to guide and direct a process of orderly social, economic, and political change, thus leaving the field exclusively to those who believe in the legitimacy of violence—on the one hand those who would act violently to promote change and on the other those who would act violently to forestall it."

Dr Jannuzi's present study will remain as a noteable work on sociology and rural economy of Bihar in particular and India in general.

Economic Development and World Trade

Gray L. French and **Richard N. Bean**[*]

> "But to conclude that world trade is doomed becuase the traditional pattern of the international division of labour seems imperiled is one of the flights of imagination at the start of which we find a lack of real imagination: an incapacity to conceive of a state of affairs radically different from that which we have been acquainted."[1]

Many economists of less developed countries, specifically those of of the Economic Commission for Latin America, the United Nations Conference on Trade and Development, and especially Raul Prebisch, apparently are mightily influenced by the arguments of Frederick List. According to List, some nations are doomed to be producers incapable of industrialization while those that are capable should follow his bluprint of development which calls for tariff protection of manufactures.[2] These economists feel rightly that a strong case can be made for the development of List's so-called tropical countries. However, they feel that the industrial countries' increases in tariffs on manufactures in the past eighty years have been inspired in part by the industrial countries' fear of competition with newly industrialized countries and are designed to discourage that development.[3] Further, this results in the less developed countries' subsidizing the greater relative economic development of the already industrialized countries since newly developed economies would almost certainly have comparative advantages for international trade in some areas of "new" producttion. Hence, if levels of real income are to be increased in the less developed countries without industrialization, it must be through further specialization in primary products to be traded for manufactured products. Thus, international trade is to be the only vehicle of improved living standards of millions of people in less developed countries if industrialization is denied them. However, those economists of less developed countries deny that they are benefiting from such trade and seek to prove this by claiming that their terms of trade are secularly declining or that the gains from such trade are denied them.[4] Aside from the problem of properly measuring the terms of trade and its adequacy in measuring gains from trade, it would appear that no such secular decline can be established.[5] Certainly, the recent experience of the petroleum exporting countries would deny the decline. However, if international trade is not serving the function of raising their living standards, then heroic efforts to industrialize at practically any cost are called for.

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The future of world trade indeed appears bleak to the economists of the less developed countries. This dissatisfaction with existing trade conditions led representatives of the less developed countries to convene the first meeting of UNCTAD in 1964 as a vehicle to voice their grievance and to consider possible remedies to their problems. The most interesting changes suggested by UNCTAD were for the establishment of preferences in the markets of developed countries for the exports of manufactured goods by the less developed countries and for preferential arrangements for trade among the less developed countries in manufactured products.[6] These proposals and the support they received strongly indicate that the developing countries not only want to industrialize but also want to augment their trade earnings by exporting manufactured products as well as primary products.

Manufactured goods have recently come to account for a larger share of the total exports of developing countries. Evidence of the trend appears in Table I.

Table I

Rates of Growth of Exports from the Developing Countries By Main Commodity Groups 1953-55 and 1963/65

Commodity Group	Annual Average Value of Billions of U.S. Dollars 1953/55	1963/65	Annual Average Rate of Growth in per cent 1953/55 to 1963/65
Food, beverages, and tobacco	8.8	11.3	2.6
Agricultural raw materials	4.3	4.7	1.1
Nonagricultural raw materials	2.2	3.6	5.2
Fuels	5.3	10.5	7.1
Total primary commodities	20.4	30.0	3.9
Manufactures	1.7	3.9	8.6
Total exports	22.3	34.1	4.3

Source: United Nations Conference on Trade and Development, Recent Developments in Commodity Trade (New York: United Nations, November, 1967).

Exports of manufactures have increased by 8.6 per cent a year while exports of primary products have only increased by 3.9 per cent a year. Exports of manufactures have increased from 7.6 per cent to 11.4 per cent of the value of total exports of the developing countries during the period observed.

The pessimistic view of the future of world trade by economists of the less developed countries is buttressed by the views of some economists of the older industrial nations, primarily England and Germany. International trade is viewed in the main as consisting of specialization in, and the trading of, manufactured articles for primary articles between industrial and less developed countries.[8] The fact that the foreign trade of England for a long period was of such character is of no small influence upon such views. Many economists of industrial countries seem to believe that as less developed countries develop, international trade will be choked off and both manufacturing and primary producing countries will suffer and that a country such as England will suffer relatively more because of the limitation of the imports of basic necessities. The disappearance of international trade as economic development proceeds is apparently to be caused by the disappearance of trading advantages in manufacturing as the structures of production in the developing country become similar to that of the older developed country, erasing the international basis of trade and thus the demand for each other's products. It has long been contended that with economic development of one of the two trading partners, a process equated with industrialization and rising per capita income, the volume of international trade between them would diminish. With the development of an increasing number of the formerly less developed trading partners, the basis for world trade, *ceteris paribus*, would steadily become eroded. The newly industrialized countries would produce for themselves what they formerly imported from the more highly industrialized countries, narrowing the extent of the international market for manufactured goods.[9] Economists of less developed countries do not deny this development, but view it as another basis for disenchantment with international specialization and trade. For this reason, it would seem that economists from older industrial countries have little sympathy for development plans of the less developed nations.[10] Thus, both developed and developing countries appear pessimistic about the future of world trade.

It is not the intention of this paper to try to allay the fears of the economists of the less developed countries nor to try to refute their arguments, but to consider the implication of the argument of the economists of the older industrial countries that comparative advantage and gain from trade tend to disappear with economic development.

Those economists fearful of industrialization abroad base their reasoning on a static concept of the Laws of Comparative and Absolute Advantage. That is, it is assumed if a newly industrializing country enters upon production of a commodity in which the older industrial country held an absolute advantage, the diminished exports of that commodity by its trading partner will not in the future be entirely replaced by different exports of comparative or absolute advantage. Thus, as economic development proceeds, the basis of trade is destroyed between trading partners of industrial and primary producing countries with the result a withering of the value and volume of world trade.

The more likely effects of industrialization of the less developed trading partner on the trade between them can be illustrated as it affects comparative and absolute costs in the two countries.[11] The principal simplifying assumptions to be made in the beginning are constant costs, barter trade, unchanging levels of national income and prices, no transport costs, no trade barriers, competition, and a given exchange rate of one to one.

Illustration I represents the production and trading possibilities in and between a developed country (A) and a less developed country (B) before significant industrialization has begun in B. Both country A and Country B have a long list of non-exportable types of goods and

Illustration I

	Developed Country A		Developing Country B	
Commodity	Production	Cost-price	Production	Cost-price
1. Non-exportable goods and services, e.g., local transportation, etc.	Produced	X	Produced	X
2. Bananas	Not produced	—	Produced	50
3. Cloth	Produced	20	Not produced	
4. Matches	Produced	30	Not produced	
5. Shoes	Produced	10	Not produced	
9. Many other manufactured goods	Produced	X	Not produced	

Trade : A exports cloth, imports bananas.
B exports bananas, imports cloth.

services denoting the existence of internal market structures and specialization in the two countries. B produces no goods of an exportable nature other than bananas. A produced a long list of exportable goods in which it has an absolute advantage. In this example, A desires to buy bananas from B, which has an absolute advantage in banana production. B is undoubtedly interested in buying a long list of goods produced for domestic consumption, but decides to use all of the proceeds from the sale of bananas to buy cloth in which A has an absolute advantage. Which of A's goods move in trade is determined by Country B because A has only one choice for an import, bananas. Assuming barter trade, A trades cloth for B's bananas.

Apparently, most economists would agree with this explanation of trade between the two nations under the above conditions.

Illustration II reveals the case where industrialization has occurred in B to the extent that B has the capability to establish a cloth industry. Three possibilities now exist for trade between the two.

In case one, if the costs of production of cloth in B are higher than in A (at the pre-determined exchange rate), A will buy no cloth from B and neither will consumers in B. Therefore, the situation is an unstable one, and B will have difficulty in establishing and maintaining a cloth industry. B will likely continue to use the foreign exchange obtained from selling bananas to A to buy cloth from A. The result for trade between the two, of course, is that it will continue undiminished and in composition as before in illustration I.

Illustration II

Case One

	Developed Country A		Developing Country B	
Commodity	Production	Cost-Price	Production	Cost-Price
1. Non-exportable goods and services, e.g., local transportation, etc.	Produced	×	Produced	×
2. Bananas	Not produced	—	Produced	50
3. Cloth	Produced	20	Produced	30
4. Matches	Produced	30	Not produced	—
5. Shoes	Produced	10	Not produced	—
6. Many other manufactured goods	Produced	×	Not produced	—

Trade : Unstable and indeterminate.

In Case Two the composition of trade changes, but the value of trade between the two countries is unchanged. Here the costs and prices of cloth in the two countries are the same when converted by the exchange rate. That is, A no longer has an absolute advantage in the production of cloth, and neither A nor B has a comparative advantage or disadvantage in cloth production. Thus, all of the production of cloth in each country is bought by the consumers of the same country. No cloth is traded. This means A has lost its export market for bananas *only if* B will now buy some other exportable product from A of equal value.

Illustration II

Case Two

Commodity	Developed Country A Production	Cost-price	Developing Country B Production	Cost-Price
1. Non-exportable goods and services, e.g., local transportation, etc.	Produced	×	Produced	×
2. Bananas	Not produced	—	Produced	50
3. Cloth	Produced	20	Produced	20
4. Matches	Produced	30	Not produced	—
5. Shoes	Produced	10	Not produced	—
6. Many other manufactured goods	Produced	×	Not produced	—

Trade: A exports matches, shoes, or other manufactures and imports bananas.

B exports bananas and imports some combination of manufactures other than cloth.

In regard to the latter, some other economists doubt whether B will shift its demand for cloth from A to some other product produced by A. However, since B does not produce thousands of attractive items, it would be inconceivable that B would, to any great extent, refuse to convert its foreign exchange earnings to an active demand for the many things it does not produce. The historical balance of payments difficulties of developing nations implies this is so.

Thus, if B makes full use of its foreign exchange to buy matches, shoes, or any combination of exportable goods produced by A, there is no reason for trade between the two to change in value, only in composition. This result, if the implications of the argument are not misread, is contrary to that expected by many economists who see trade between a developed and a developing country only as an exchange of manufactures for primary products.

The Case Two situation will prevail even if the cost and price of cloth is not identical within the countries if the difference is off-set by transport costs, or if barriers to the trade in cloth are erected either by Country A or B or both.

Case Three assumes the cost and price of cloth in B are actually lower than that of A. Thus, A now buys both bananas and cloth from B, which gives B a greater supply of foreign exchange with which a greater value of A's goods can now be imported. B's demand for A's goods now shifts from cloth to one or more other exportable goods which A produces and B does not produce—that is, products in which A has an absolute advantage. The result for trade between the two countries is a changing composition of trade in addition to an increase in value of trade due to the industrialization of the less developed trading partner. All that is required for trade to increase in value is that A maintains its demand for B's commodity of absolute advantage (bananas) while fulfilling the demand for B's new commodity of comparative advantage (cloth).

Illustration II
Case Three

	Developed Country A		Developing Country B	
Commodity	Production	Cost-Price	Production	Cost-F
1. Non-exportable goods and services, e.g., local transportation, etc.	Produced	×	Produced	×
2, Bananas	Not produced	—	Produced	50
3. Cloth	Produced	20	Produced	10
4. Matches	Produced	30	Not produced	—
5. Shoes	Produced	10	Not produced	—
6. Many other manufactured goods	Produced	×	Not produced	—

The assumption of constant costs may now be changed to allow changing cost conditions in the production of any of the commodities in the two countries. As a general statement one can conclude that in Illustration II (any case) as long as costs are increasing or decreasing in either country in cloth production such that no trade in cloth will occur[12] or such that the less developed partner will still import some cloth, the value of trade between Countries A and B will be undiminished. If cost conditions change such that Country B exports some cloth to A, the value of international trade will increase. The more additional "new" commodity production by B, the more likely this is to occur, which is to say, the more rapid and/or pervasive is the economic development of B, the more likely is trade to increase. Thus, the basis of trade between the two partners is not eroded but strengthened and increased in value.

It follows, therefore, that no matter what the relative rates of industrialization or development of the two countries, the addition of more exportable products by the less developed member increases the chances of one of them being of comparative advantage. In fact, in this two-country model it would be almost a physical impossibility that the relative prices of two newly produced commodities should bear the same relationship as prices of the same two commodities in the developed country. This means that B will now export one of them to A, and, further, the list of B's exports to A will likely, *ceteris paribus*, increase at half the rate of the increase in the number of additional products produced by B.

With more exportable commodities due to industrialization, B earns increasingly more foreign exchange from A which can be used to buy more goods in which A has an absolute advantage. The value of foreign trade between the two countries then increases with the industrialization of the less developed partner rather than decreasing as some would expect. Logically, this process should continue as long as either eonomy is in the least dynamic and progressing (i.e., affected by technological progress) as is evidenced by changes in costs, prices, or in the introduction of a new, improved, or differentiated products by one or both.

The analysis here is not meant to imply that industrialization occurs without causing any problems for the domestic economies of trading countries. The plight of Lancashire is symptomatic not of a decreased basis of trade but the opposite. It means that England, long an exporter of cotton cloth, should now accept cloth imports and shift capital from that industry to one of a greater future in terms of economic returns. International competition should force England to shift its resources to a more efficient use to the benefit of all concerned. This shift of resources may be difficult, it is admitted, but necessary for the economic growth of the affected country and necessary as well to the maximization of gains from foreign trade.

The above illustrations demonstrate that the volume of international trade can increase with economic development and that it may accelerate with the more rapid industrialization of the world's nations. Can anyone deny that U. S. trade with the U. S. S. R. now offers many more possibilities as to variety and volume than in the pre-World War I era? This is not a mere result of Russia's higher national income, but a product of the fact that she now produces more things that we might want and by exporting them can earn dollars with which to increase her imports from us.

The absolute volume of world trade has steadily increased since other countries than England became industrialized, a fact consonant with the above analysis.[18]

Part of this increase in the volume of world trade since England's industrialization, and the successive industrializations of other countries, resulted from the increasing numbers of products of comparative advantage due to widespread economic development and from technological advancement which has created resources from "neutral stuff." Technological advancement gave many countries absolute advantage in products requiring certain resources that have been unevenly distributed geographically and comparative advantages in other products because countries are differently endowed with relative quantities and qualities of pertinent productive resources.

The historical growth to the present day in the value and volume of world trade is both large and unmistakable. It has been increasing not despite world industrialization as some would claim, but certainly, in part, due to this industrialization. The only appropriate historical datum to test the thesis of this paper is the datum on the British economy compiled by Hirschman, but this datum revealing the history of structure and value of foreign trade for England is instructive as a case in point.

Table II reveals the increasing value of English foreign trade during the seventy-five years under study. It can also be observed from Table II that the "traditional" type of interchange became increasingly a smaller proportion of a total trade that increased some three times in value.

During this seventy-five year period two industrial giants—U.S.A. and Germany—rose to challenge the world industrial leadership of England. This influence on the foreign trade of England apparently

Table II

Percentage Distribution of British Foreign Trade By Type of Interchange 1854-1929

	1854-1863	1864-1873	1874-1883	1884-1893	1894-1903	1904-1913	1925-1929
Exchange of commodities against "Invisible items"	14.2	12.1	20.3	18.2	23.9	15.1	23.1
Exchange of foodstuffs and raw materials against foodstuffs and raw materials	11.1	10.9	12.1	14.3	16.3	20.0	15.8
Exchange of manufactures against manufactures	8.8	13.2	17.2	20.1	25.3	22.7	25.7
Exchange of foodstuffs and raw materials against manufactures	65.9	13.8	50.4	47.4	34.5	42.2	35.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Value of foreign trade in millions of pounds sterling	2,820	4,553	5,486	5,675	6,723	9,620	8,880

Source: A. O. Hirschman, National Power and the Structure of Foreign Trade (Barkely: The University of California Press, 1945), P. 145.

was not negative but resulted in much larger value of English imports of manufactures.[14] Further, the British not only imported more manufactures from industrializing countries but exchanged manufactures for them in increasing amounts. The trade of manufactures by the British trebled as a per cent of total trade, at the same time the "traditional" type of interchange was halved as a per cent of total trade. Hence, the thesis that industrialization offers a widening basis for international trade appears to be confirmed by Hirschman's data for England during a significant period of world development.

The most common case accompanying economic development is one in which increase in the numbers of products of comparative advantage is more rapid than the increase in the numbers of products of absolute advantage. In fact, one may characterize much of international trade as "arbitrage trade" among nations producing similar substitutable products, i.e., exhibiting price and income cross-elasticities of demand.

All of the above analysis concerning the effects of development on international trade is based on the assumption that the developmental process is mainly characterized by the production of "new" products in a developing country. The basic argument is that an increase in the numbers of products produced in a less developed country results in increased number of products of comparative advantage between that country and all other more developed countries.

In contrast, increases in productivity only in industries already established within a country will leave unchanged the number of products in each country enjoying comparative advantages. This is why less developed countries cannot depend solely on increases in productivity in one or two export industries to gain more and necessary foreign exchange with which to further their developmental programs, for increased sales are dependent upon price and income elasticities of demand at already established margins. For example, an increase in gross foreign sales of ten million dollars from, perhaps, $150 million to $160 in a product possessing an absolute advantage already traded in a well-developed market would probably be much more difficult to attain than the marketing of a "new" product that substitutes for the greater value formerly sold by a developed country.[15]

In effect, the developing country with a "new" product of comparative advantage is replacing the industrial country's exports of that product with its own. Consequently, the international market for that product does not have to be enlarged for the developing country to materially increase the value of its exports.

Attempting to increase gross foreign sales in an existing export product of absolute advantage is especially difficult with an income elastic but price inelastic good, which is the case of most less developed countries exporting only one or two products. The "new" product may be identical in all respects with that obtained elsewhere, or it may be an easily differentiated product. The only requirement is that it shall be of comparative advantage to the developing country in the matching of production advantages with a significant number of countries. In fact, the "new" product would most likely to be not new but an identical one or easily differentiated one, since to produce something really new presupposes an advanced industrial technology that produces inventions and new products, i.e., a characteristic of an already developed economy.

This reasoning lends new support to economists and politicians of less developed countries who want to industrialize their countries in order to raise incomes and living standards rather than to place primary emphasis on increasing productivity in already established absolute advantage industries as they often have been urged. Their reasons for so advocating may range from a Marxian theory of exploitation to a purely chauvinistic one, but they also could ground them in the logical extension of economic orthodoxy as demonstrated, if international trade is to play a significant part in their economic development.[16] Economic development can occur without international trade, but practically all authorities in the field feel that trade would materially contribute both to the speed and to the extent of that development, and, therefore, can be an important impetus to take-off from the low level equilibrium trap in which many less developed countries are ensnared.

Footnotes

[1] A. O. Hirschman, *National Power and the Structure of Foreign Trade* (Barkely : The University of California Press, 1945), p. 151.

[2] Frederick List, *The National System of Political Economy,* trans. S. S. Lloyed (London : Longmans, Green, 1885).

[3] Hirschman, *op. cit.,* p. 28.

[4] Raul Prebisch, *The Economic Development of Latin America and its Principal Problems*, Economic Commission for Latin America, United Nations (New York : United Nations, 1950), pp. 8-9 ; and H. W. Singer,

"The Distribution of Gains Between Investing and Borrowing Countries," *American Economic Review*, XL (1940), p. 477.

[5] Charles P. Kindleberger, *The Terms of Trade : A European Case Study* (New York : John Wiley, 1956).

[6] Harry G. Johnson, *Economic Policies Towards Less Devoloped Countries* (Washingtion : The Brooking Institution, 1967). Contains a thorough discussion of the 1964 UNOTAD meetings and the issues and implications arising from them.

[7] Ian Little, Tibor Scitousky, and Maurice Scott, *Industry and Trade in Some Developing Countries, A Comprative Study* (London: Oxford University Press, 1970),pp. 243-253.

[8] Gilbert Slater, "Food Prices of Exported Manufactures," *Economica*, (1924), 194-196 ; D. H. Robertson, "A World for the Devil," *Economica*, (1923), 206 ; S. L. Parmar, "Future of World Trade," *The Indian Journal of Economics*, XXXVIII, No. 148 (July, 1957), 52 ; and Hirschman, *op, cit.*, pp. 146-151.

[9] Much has been made of the plight of Lancashire as a prime example. Robertson, *op. cit.*, 206.

[10] Hirschman, *op. cit.*, p. 150 ; Singer, *op. cit.*, 473-485 ; and Prebisch, *op. cit.*

[11] It is certainly not denied that factors other than industrialization influence the value and volume of world trade

[12] This should be theoretically impossible using infinitely small marginal increments, but as a practical matter, this could and does happen.

[13] D. D. Humphrey, *American Imports* (New York : The Twentieth Century Fund, 1955), pp. 461-463. Notes that the United States through improving technology lost comparative advantages in those industries unsuitable to mechanization and mass production techniques.

[14] W. C. Gordon, *International Trade* (New York : Alfred A. Knopf, 1958), p. 24 ; and J. W. Sailors, "Secular Terms of Trade : Theory and Measurement" (unpublished Ph. D. dissertation, The University of Texas, 1956), pp. 348-349.

[15] W. A. Lewis and P. J. O'Leary, "Secular Swings and Production and Trade, 1870-1913," *Manchester School*, XXIII, No. 2 (May, 1955), 148 ; and W. A. Lewis, "International Competition in Manufactures," *American Economic Review*, XLVII ; No. 2 (May, 1957), 579-585. The latter notes the increased British imports of manufactures early in the twentieth century while Germany and the United States were flooding the domestic British market with manufactures.

[16] Another reason for prefering industrialization is that severe strains are placed on the balance of payments due to increase in income and demonstration effect as development is attempted if the country relies solely on the foreign exchange earnings of primary product exports.

The Economics of Discrimination : Ageism

Philip H. Siegel Judith A. Koncsol*

I. Introduction

The literature in the field of economics of discrimination has been increasing at a significant rate recently. As Phyllis Wallace has pointed out, the passage of the Civil Rights Act of 1964 and the attendant interest in affirmative action have evoked economists' interest in analyzing the basis of discrimination and engendering relevant remedies.[1] This paper is primarily concerned with the discrimination of individuals and groups by employers on the basis of age. This does not imply that there are not other types of ageism, both overt and covert, such as consumption, holding of political office, property ownership, etc. Each of these manifold areas would require some detailed analysis.

Our procedure will be to first review the various types of employment discrimination analysis and methods, to critique these methods and to employ a somewhat different approach to the problem.

This paper does not suggest that its approach would be universally applicable in analyzing all types of discrimination ; however, we did find that our approach effectively explained ageism in employment.

The current literature can be roughly classified into three broad categories :

Category I—Studies dealing with either racism, sexism or discrimination in general.[1]

Category II—Studies which deal with some aspect of discrimina-

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[1] Those studies dealing with sexism include (2, 3, 4, 5, 6. 7, 8, 9. 10, 11, and 12) ; the works focusing on racism are (13, 15, 16. 17, 18, 19, 20, 21 and 22); those dealing with employment discrimination in general are (23, 14, and 28).

tion and attempt to empirically verify or measure this discrimination.[2]

Category III—Included in this category are studies which provide some type of theoretical and/or institutional framework with which to analyze and explain the discrimination. These studies can be subcategorized as follows: traditional neoclassical studies,[3] institutional with specific reference to dual labor market hypothesis,[4] and radical approches.[5]

II. Critique of the Neoclassical Work

Most of the work in the economics of discrimination, both empirical and theoretical, can be classified as Neoclassical. There are a number of short-comings of the Neoclassical school. Most generally, the theories delineated by Becker, Thurow, Arrow, et al. have not generated analytical models that can be utilized for policymaking.[1] Moreover, the Neoclassical work has somewhat relegated the discrimination problem to that of the theory of choice. They fail to take into account the conditioning mechanisms of the socio-economic institutions which reinforce or even are the source of the discrimination. For example, a person has to be a certain age before he or she can hold certain political offices. Apparently, these laws and the arguments which support these laws imply that more chronological age means more skill and higher productivity. This paper will attempt to challenge this view that the simple accumulation of pure age means greater productivity.

Some studies, such as Gwartney and Stroup's, have hypothesized that age as well as income are not significant variables in explaining income differentials.[6] A number of other studies contradict these findings. Malkiel and Malkiel, for example, found that young females with similar education and higher productivity measures earn significantly less than older, less productive males.[7] The Malkiel study further notes that these income differences which are attributed to age are quite significant. The discrimination is on an institutionalized basis of job assignment rather than on a conscious level of discrimination In essence, there is an overt conditioning process which

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2. These include (28, 29, 7, 5, 6, 21, 22, an 25).
3. Neoclassical approaches include (2, 23, 24, 27, 30, 31, 32, and 33).
4. Dual labor market approaches are (34, 14, 35, and 36).
5. For radical studies see (3, 13, 34, and 16).

relates assignment to age, sex or race. The younger a person is, ceterus paribus, the "less" responsible that person is.

Although suggesting that the problem is related only to racism, Morse points out that Neoclassical work has completely overlooked the institutional problem of job reserving.[14] Job reserving is the proclivity to have responsible and higher paying jobs filled by white, middle-aged males. This leaves the lower paying, less responsible jobs to younger people, blacks and females. In other words, the better and higher paying positions are dominated by prime-age (over 35) white males.

Reich's empirical work suggests that Becker's hypothesis, that discrimination would be contrary to the economic interests of older white male capitalists, is incorrect. Reich demonstrates that there is a high positive correlation between increases in discrimination and increases in income to white, middle-aged and older male owners of capital.[15]

Others have also noted the limitations of Becker's analysis in that it ignores the institutional arrangements which reinforce the social condition of stereotypes. Franklin and Resnick noted that the Becker-type Neoclassical choice model ignores the milieu in which choices are made. Therefore the model statistically fails to explain why such choices are not random.[16]

In further support of this criticism, Bergmann has noted there are more profits and/or extra benefits to be gained by older white males and business firms by segmenting the income distribution on some type of discriminatory basis.[3] This paper, of course, suggests that one type of discrimination, ageism, is an important form of segmentation.

III. Development of the Model

In accordance with Part II of this paper in which it was implied that a different approach to explaining discrimination is needed, this section develops a model synthesizing the general emphasis on the dual labor market theory and the piece-wise linear age function suggested by Gordon, Morton and Braden.[28] We can write

1. $Y_1 = Y(A, Ep)$

in which

Y_1 = income of workers less than 35 years of age, not taking into account sex, race or national origin

A = age of the individual

Ep=an index of education and productivity.* It must be pointed out that Ep was formulated primarily for this study which is of an educational system. In order to generalize the approach, a different type of measurement might be employed.

2. $Y_2=Y(A, Ep)$

in which Y_2=the income of workers greater than 35.

The next step was to statistically estimate these separate functions and to test whether there was any statistically significant difference between the two groups.

The data were collected from a public college system ; therefore, generalization about other educational systems and other areas of the economy must be made cautiously. However, similar studies of other educational institutions using somewhat different approaches have uncovered similar findings.[28]

Using a single-stage least squares method of estimating the equation, the results are as follows :

3. $$Y_1=-277.03+\underset{(29.57)^{**}}{32.80A}+\underset{(20.71)}{54.91E}$$

$S.E.E.=1.56$

$F=7.43$

$\bar{R}^2=.25$

$N_1=62$

Equation three indicates that the regression is significant. The partial regression coefficient between age and income is positive and highly significant. Similarly the education-productivity variable's partial regression coefficient is also positive and significant. The mean bi-weekly income for group 1 is 818.67 with a standard deviation of 158.17. The relatively low corrected coefficient of determination is not uncommon for cross sectional studies of this type.

The statistical estimation of group 2 is :

4. $$Y_2=509.69+\underset{(25.57)}{9.70A}+\underset{(10.96)}{67.04E}$$

$S.E.E.=1.33$

$F=42.42$

$\bar{R}^2=.26$

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* This variable, to say the least, will generate a great deal of controversy. It reflects the weighted average of the person's post-schooling investment and the average student load and research output.

** Figures in parenthese are "t" values.

Equation four shows that the regression estimate is also significant. As in equation three, both independent variables have significantly positive partial regression coefficients. The mean bi-weekly income for group 2 was 979.47.

Our next task was to see if there was any statistically significant difference between the two groups' income. A point biserial correlation was computed to test whether or not the two groups' mean income was being generated from the same or different populations.

$N_t = 257$ total number of individuals i the sample

$N_1 = 62$ persons with age$\leqslant 35$

$N_2 = 195$ persons with age>35

$\bar{X}cy_1$=mean bi-weekly income of group 1

$= 818.67$

$SD_1 = 158.17$

Xiy_2=mean bi-weekly income of group 2

$= 1030.61$

$SD_2 = 149.73$

σt =standard deviation of the entire sample (Nt)

$= 176.654$

We can define the point biserial correlation coefficient as

$$5. \quad R_{pBi} = \frac{(Xcy_1 - Xiy_2)\sqrt{N_1 N_2}}{N\,\sigma t}$$

$$R_{pBi} = -.51$$

The standard error of the distribution is

$$6. \quad \sigma pBi = \sqrt{\frac{1 - R_{pBi}^2}{N-2}} = .05$$

The "t" test is

$$t - \frac{R_{pBi} - 0}{\sigma pBi} = -10.2$$

This indicates that there is a statistically significant difference between the bi-weekly incomes of group 1 and group 2. This result lends support to our hypothesis that there is significant bias in employment practices in our observed example. In effect, despite the fact that group I had a higher mean productivity score of .96 as compared to .76 for group 2.

IV. Conclusion

This paper has attempted to shed some light on a much neglected area of employment discrimination, ageism. The focus of attention has primarily been upon the discrimination against younger workers. After reviewing the literature in the field, we criticised the mainstream approach and suggested that a synthesis between this approach and the dual labor view may provide better explanations. Only one area of employment (education) was considered. The statistical results showed that younger workers are more productive and in this employment area are better trained than their older counterparts. However, the younger group receives, ceteris paribus, a statistically significant lower income. These findings support the view that there exists overt discrimination of individuals based upon age.

Bibliography

1. Adams, A. V., "A Theory of Labor Market Discrimination with Independent Utilities," American Economic Review, May, 1973.
2. Arrow, Kenneth J., "Some Mathematical Model of Race Discrimination in the Labor Markets" in A. J. Pascal. ed., Racial Discrimination in Economic Life, Lexington, Mass. : D. C. Heath & Co., 1972.
3. Arrow, Kenneth J., "The Theory of Discrimination" in O. Ashenfelter and A. Rees, Ed., Discrimination in Labour Markets, Princeton : Princeton University Press, 1973.
4. Becker, Gary S., The Economics of Discrimination, Second Ed., Chicago : University of Chicago Press, 1971.
5. Bergmann, Barbara R., "The Economics of Women's Liberation," in Mermelstein, David, ed., Economics : Mainstrem Readings and Radical Critiques, Second Ed., New York : Random House, 1973.
6. Bergmann, Barbara R., "The Effect on White Incomes of Discrimination in Employment," Journal of Political Economy, March-April, 1971.
7. Cohen, Malcolm S., "Sex Differences in Compensation, "The Journal of Human Resources, Fall, 1971.
8. Edgeworth, F. Y., "Equal Pay to Men and Women for Equal Work," Economic Journal, December. 1922.
9. Franklin, R. and S. Resnick, "The Structure of Racial Discrimination" in David Mermelstein, ed., Economics : Mainstream

Readings and Radical Critiques, Second Ed., New York : Random House, 1973.

10. Freeman, R. B., "Decline in Labor Market Discrimination and Economic Analysis," American Economic Review Procedings, May, 1973.

11. Fuchs, V. R., "Differences in Hourly Earnings Betwen Men and Women," Monthly Labour Review, May, 1971.

12. Goldberg, Marilyn Power, "The Economic Exploitation of Women" in David Mermelstein, ed., Economics : Mainstrem Readings and Radical Critiques, Second Ed.. New York : Random House, 1973.

13. Gordon, David M., Theories of Poverty and Underemployment, Lexington, Mass. : D. C. Heath, 1972.

14. Gordon, Nancy M., T. E. Morton and Ina C. Braden, "Is There Discrimination by Sex, Race and Discipline ?" American Economic Review, June, 1974.

15. Gwartney, James and R. Stroup, "Measurment of Employment Discrimination According to Sex,' Southern Economic Journal, April, 1975.

16. Hamilton, M. T., "A Study of Wage Discrimination by Sex : A Sample Survey in the Chicago Area," unpublished doctoral dissertation, University of Pennsylvania, 1970.

17. Harrington, Michael, The Other America, New York : The Macmillan Co., 1962. Concerns ageism but only older people's aspects.

18. Harrison, B-, "Education and Underemployment in the Ghetto," American Economic Review, December, 1972.

19. Haworth, J. G,, J. Gwartney and C. Haworth, "Earnings, Productivity and Changes in Employment Discrimination During the 1960's," American Economic Review, March, 1975.

20. Krueger, A. O., "The Economics of Discrimination," Journal of Political Economy, October, 1963.

21. Malkiel, B. G. and J. A. Malkiel, "Male-Female Pay Differentials in Professional Employment," The American Economic Rsview, September, 1973.

22. Marshall, Ray, "The Economics of Racial Discrimination : A Survey," Journal of Economic Literature, September, 1974.

23 Morse, Lawrence B., At the Edge of the Economy : The Economics of Discrimination, Morristown, N. J. : General Learning Press, 1973.

24. Oaxaca, R. L., "Sex Discrimination in Wages." in O. Ashenfelter

and A. Rees, Ed., Discrimination in Labor Markets, Princeton: Princeton University Press, 1973.

25. Oaxaca, R. L., "Male-Female Wage Differentials in Urban Labor Markets," Princeton University Industrial Relations Section Working Paper No. 23, 1971.
26. Piore, Michael J., "Jobs and Training" in Bier, S. and R. Barringer, Eds., The State and the Poor, Cambridge, Mass.: Winthrop, 1970.
27. Piore Michael J., "The Dual Labor Market; Theory and Implications" in Gordon, D. M., Ed., Problems in Political Economy: An Urban Perspective, Lexington, Mass.: D. C. Heath, 1971.
28. Reich, Michael, "The Economics of Racism" in Gordon, D. M., Ed., Problems in Political Economy: An Urban Perspective, Lexington, Mass.: D. C. Heath, 1971.
29. Schiller, Bradley R., The Economics of Poverty and Discrimination, Englewood Cliffs: Prentice-Hall, 1973.
30. Siegel, Philip H., "The Location of Industry and Job Participation Rates: An Econometric Study," Economic Affairs, January-February, 1973.
31. Siegel, Philip H., "On the Cost of Being a Negro," Sociological Inquiry, Winter, 1965.
32. Suter, L. E. and H. P. Miller, "Income Differences Between Men and Career Women," American Journal of Sociology, January, 1973.
33. Thurow, Leser, Poverty and Discrimination, Washington, D. C.: Brookings Institution, 1969.
34. Wallace, Phyllis A., "Employment Discrimination: Some Policy Considerations," in Ashenfelter, Orley and Albert Rees, Ed., Discrimination in Labor Markets, Princeton: Princeton University Press, 1973.
35. Weiss, R., "The Effect of Education on the Earnings of Blacks and Whites," Review of Economics and Statistics, May, 1970.
36. Welch, Finis, "Education and Racial Discrimination" in O. Ashenfelter and A. Rees, Ed., Discrimination in Labor Markets, Princeton: Princeton University Press, 1973.
37. Zellner, H., "Discrimination against Women, Occupational Segregation and the Relative Wage," American Economic Review Proceedings, May, 1972.

The Multinational Corporations and the Developing Countries

Som Deo*

The emergence of the Multinational Corporations on the world scene marked the beginning of a new era in economic, political and cultural relations between imperialist and developing countries. The MNC, because of its great power to plan economic activity, represents an important step forward over previous methods of organising international exchange. It demonstrates the social nature of production on a global scale. As it eliminates the anarchy of international markets and brings about a more extensive and productive international division of labour, it releases great source of latent energy. However, as it crosses national boundaries it pulls and tears the social and political fabrics and erodes the cohesiveness of national states.

The term MNC may be understood as the firm operating in more than one country. "Firms that participated in international business solely by exporting or by licensing technology are not multinational." Some observers are of the view that "a firm is multinational if more than 25% of its profits are produced outside its home country." Raymond Vernon says that the firm that controls operations in at least six countries is the Multinational Corporation. In the Marxist analysis, MNC is an expression of economic imperialism and of concentration in the phase of late capitalism, which necessarily runs into conflict with major national and labour interest. MNCs are almost enjoying monopoly in production, distribution and prices of their goods. Although conceived as small business enterprises, to start with, they have grown into super giant combines with leverage not only on the economies of many countries but also having political overtones.

The workings of these giant organisations are nothing new in international trade and commerce. They represent the characteristic

Jaipur.

form of the mercantilist period when large joint-stock companies, e.g. The Hudson's Bay Co., The Royal African Co., The East India Co., to name only the major English merchant firms, organised long distance trade and commerce with the USA, Africa and Asia.

MNCs are claimed to be the agents of world economic development. They address themselves not to the few but to the urgent needs of the overwhelming many. In a way, they can be termed as a new revolutionary ideology thrown up in response to recent technological changes. The basic decisions of the MNCs with respect to marketing, finance, production and research are made on the basis of the alternatives open to them anywhere in the world. The MNCs, possessing a ramified international network of subsidiaries and business ties in the 'Third World', control a considerable part of its natural and manpower resources on the one hand and concentrate in their hands capital and the fruits of the scientific and technological revolution urgently needed for development on the other. They act as the most typical representatives of imperialism in the post colonial epoch.

Operational Analysis of MNCs

Starting from a small beginning these corporations over the period have come to assume such immense complex dimensions by a combination of expertise, amalgamation of companies and manipulation of technique that they are dominating the 'commanding heights' of the economy of developing nations. Out of an estimated gross world product of nearly 3000 billion dollars in 1970, the share of MNCs was 450 billion dollars constituting 15%. It is estimated that this share of the MNCs in the world product would cross over 50% by 1985. This fifty per cent share in the gross world product will be produced by 200 giant corporations spread over many countries. The alarming prospects have been the cause of the stir in many global forums. The growing influences of these giant Corporations on the world economy have led the different economic bodies like Economic and Social Council, UNCTAD, EEC, OECD and the like to discuss the implications of the spread-over of these MNCs but no concrete steps could have been evolved so far.

It has been estimated that by the end of 1971 the total stock of foreign direct investment of the major MNCs was of the order of 165 billion dollars. Of these about one-third is invested in the developing countries. The interesting features about the MNCs were that out of a total foreign direct investment of 104 billion dollars by the end of

1967, developed countries accounted for 71 billion dollars and developing countries accounted for 33 billion dollars. All other countries joined the USA in investing heavily in the Western Hemisphere. The share of Switzerland in this region was 76%, Canada 93%, FRG 78% and that of the Netherlands, Italy and Japan more than 55% each. The UK, USA and Japan were only countries which made significant investment in the Middle East.

In 1974 the UN Economic and Social Council published a special study on the activities of the MNCs. Of the total volume of the investments of the MNCs abroad, 18% was in Latin America, 6% in Africa, 5% in Asia and 3% in the middle East. The distribution percentage of the branches of the MNCs in Asia, Africa and Latin America is about the same. About 28% of the US MNCs' investments abroad, 38% of the British, 44.8% of the French, 33.8% of the W. Germany and 60% of the Japanese go to developing countries. Up to 70% of the investments of the US MNCs in the 'Third World' are concentrated in the Latin American countries ; two-thirds of the investments of the French Multinational are concentrated in Africa, mainly in her former colonies ; and about 60% of the foreign investments of the British Multinationals are in Great Britain's former colonies in Asia and Africa. The MNCs are enjoying a greater profitability. For instance, Mitsubishi along with its establishment in India had an annual group turnover of 18,129 million dollars in 1972 and their profit before tax for the same year was 132 million dollars. British American Tobacco had an Annual turnover of £2030 million in 1972 and profit before tax of £161.6 million. The corresponding figures for the IBM were 9.53 b. US dollors and 2.43 b. dollars respectively. By their sheer annual turnovers and profits before taxes, the MNCs have the capacity to throw the economy of a developing country into the shade. "Annual sales of 100 million dollars are sufficient to excercise effective influence on the economy of a developing country."

The MNCs' average rate of profit in the third world is higher than that of in the 'First World' countries. Thus the ratio of the bulk of the profits to the balance capital cost obtained by the US MNCs in the developing nations is 17.5% and in the developed countries it is only 7.9%. By this figure of profit earned by the MNCs in developing countries the exploitation of developing countries can be clearly seen. It is appropriate to say that the aim of the MNCs is always the maximisation of profit by all means. Such a higher profitability results in the accumulation of incomes in the hands of MNCs rather than in the hands of developing countries. Between 1950 and 1965 the transfer of profit on US investments from the 'Third World' countries stood more than 264% of the original investments as compared with 74% from developed countries. The profit received by De Beers in Tanzania between 1958 and 1967 recouped more than 30 times the original investment. About 200 MNCs' own assets running into thousands of millions of dollars each and possess resources that exceed the GNP of most of the small developing countries. Thus, the sales of General Motors exceed the GNP of any developing countries except India, Brazil, Mexico and Argentina.

Investment Nature of the MNCs

The nature of the investment and the unequal economic positions obviously affect the structure and the methods of operations of the MNCs in the 'Third World'. Investments of the MNCs are concentrated mostly in the extractive and plantations service industries. Usually the MNCs tend to purchase the existing industries or running businesses by showing the 'lure' of high class technology and management skill, etc. And this tendency does not help in orientation and development of the economic sector of developing countries.

MNCs : Dialectics of Internationalization of Production

The formation of the MNCs in the epoch when world capitalist productive forces have outgrown the limited boundaries of national and state divisions is natural in its own way. It is based on the objective tendency toward 'Internationalisation of production. 'Thus the MNCs are a natural phenomenon and not an accidental or ill intentioned zigzag in the evolution of capitalism which is reverting to "free competition" on the world market. It cannot be said that objectively the MNCs are incapable of making some contribution to the development of the developing countries. Many of them offer an instructive example of the international organisation of production. The operation facilitates the growth of employment, natural resources, transfer of advanced technology, capital and managerial know-how, replenishment of national budgets. In many cases the MNCs have helped in eliminating the economic isolation.

But it was not by chance that Marx pointed out that under capitalism "everything seems pregnant with its contrary." Because of their private property character the MNCs regard this contribution solely as capital loaned in advance for the subsequent exploitation of rich natural resources of the developing countries and their cheap labour. True the MNCs are so far only in the initial stage of their 'assault' on the developing countries and it will gain momentum in subsequent years.

Consequences of MNCs' Influx into the National Economy

The consequences of the MNCs working in the national economy are immensely criticised on various grounds. Admittedly, the logic can be given both for and against. But in this age of planned economic development and march towards establishing the socialistic pattern of society, the working of these giant coporations cannot be openly allowed. In order to simplify the matter, the concequences of MNCs working are divided into three heads—Economic ; Political ; and Social and Cultural.

Economic Consequences

In developing countries the MNCs have emphasized on monocultural specialization based on 'enclave' sectors in the economy although they absorb the national resources of young states and work above all for the market of the metropolitan countries and not for the development of the local economies. The whole decisions are taken at their head offices abroad rather than on the spot. The MNCs have their own philosophy of regional development. Their enterprises are concentrated in coastal zones even if the plans of the host country give priority to development of regions in the interior. They usually adopt the 'partial' narrow specifications of the enterprises established in manufacturing industry, while the most profitable stages of production are reserved for MNCs enterprises in developed countries. It is not the MNCs enterprises that are "integrated" into the national economy of the host countries but rather that the 'enclaves' of this sectors of this economy are "integrated" into the international production empires of the MNCs.

The MNCs are responsible (but not solely) for disorganising the local labour market by paying more wage rates than that of local. It should be borne in mind that the narrowly specialised character of production of the MNCs train only a 'partial worker' whose skill it is difficult to apply in other sectors of the economy.

The method of lowering the cost of production by these MNCs is usually not so appreciable. They used to establish capital intensive enterprises rather than labour intensive. While the unemployment problem in developing countries is quite aggressive. Moreover, the MNCs used to buy the existing business ; so again there is no employment orientation in the economy.

The formation of monopoly prices is another malpractice of the MNCs. About the monopoly price, "several instances of such overcharging have been documented in Colombia, where subsidiaries in the pharmaceutical industry paid 155% more than the c.i.f. price for intermediate drugs imported from parent firms. Overcharging of 40% was also found in the rubber industry, 26% in the chemical industry and 16-60% in electronic industry."

Quite often the MNCs deliberately bring to the 'host' country the 'polluting' technology which contaminates the environment. In Puerto Rico the petrochemical pollution inflicted a damage on the fishing industry and on the sugar plantation. In the Philippines, forest felling exceeded 9 times over the annual growth. The importation of advanced technology has now been given the 'green light' in almost all the developing countries. But the MNCs utilise the opportunity for their own purpose. The practice known as 'package deals' is the importation of technology on giving the MNCs' permission for the simultaneous export of capital. Moreover, this technology is first of all provided to those subsidiaries which are under hundred per cent control of the MNCs and it reaches the mixed companies when they are obsolete.

The MNCs do not fear tax evasions because of their influence. Here some of the MNCs begin the concealment of their profits from taxes. It is done by manipulating the accounts. Experts agree that in some MNCs the accounting system is often shady. Their 'intra-departmental' export and import transactions are determined solely by corporations' managers and solely for the benefit and the profits of the Corporations.

MNCs have been linked to the viability of the entire international monetary system. They have the potential power to precipitated a currency crisis by moving their assets from one currency to another.

Any future monetary regime should take into account the implications of the operations of the MNCs.

Political Consequences

The formations of MNCs have proved the "political dominance from the economic dominance." The effectiveness of the 'host' countries government policies has been nullified by these super giants.

In some developing countries the operations of the MNCs are backed by the diplomats. At times, the MNCs lavishly donate funds to parties fighting for power (Jamaica, Guyana) in exchange, naturally for future privileges.

American economist D. Fink is certainly right when he admits in his article, "The Role of Multinational Corporations in the Economic Devolopment Process" that the MNCs interfer in the internal political life of the newly freed countries in which they have their branches. Referring to the prospects between the developing countries and the Corporations, he specially notes that sooner of later the people of the young national states will begain to manifest a sharply negative attitude towards the penetration of foreign capital and its seizure of dominating position in the economy of their countries.

The MNCs have their influence at every level of the administration pattern of the developing countries in which their subsidiaries are operating.

Social Consequences

In the sphere of social and cultural fields, there is a "strong reaction against Multinational Corporations in host countries, particularly in developing countries." Their financial power and easy access to the top hierachy of government and business are specially resented by local elite groups. The MNCs which are depicted in some quarters as key instruments for maximising world welfare are seen in others as dangerous agents of imperialism. "MNCs through their tacit alliance with certain social groups, may even be regarded as obstacles to appropriate social and political development."

Some MNCs behaved unceremoniously in their relations with the workers because many developing countries have no trade unions at all or the existing ones are weak, or are subjected to repression.

Moreover, the production patterns of the MNCs are not according to the need of common-man. They produec either sophisticated captial goods or luxurious goods which are of little importance for the people of the developing nations. Further, the developing countries are also importing the culture and ideas together with goods. And those goods, products by the MNCs, which are of on use are consequently imported. Thus there is again the assault of MNCs on the "Third World's" culture.

Reaction of the Developing Countries

It is not surprising that such abuses on the part of the MNCs and their activity as a whole arouse increasingly stronger retaliatory reaction in the developing countries. At the biginning of 1970s nationalisation of many subsidiaries of MNCs swept Iraq, Congo, Peru, Lybia, India and other countries and new stricter laws regulating the activity of foreign captial were adopted in Algeria, the Arab Republic of Egypt, Ghana, Indonesia, Tanzania, Venezuela, Uganda and Zambia. OPEC and SIPEC are trying to compel the developed capitalist countries to restrict the activities of their MNCs.

India and the MNCs

The foreign corporations in India could have gone from India. But they were feared that after independence, India could restrict the foreign imports by imposing various restrictions and there might develop the 'Swadeshi Spirit.' That is why they continued their production in India itself. Moreover, the cheap labour was abundantly available in India. It is significant that there have been well timed moves recently to popularise the MNCs in developing countries. Several academicians have also advocated the case for MNCs in different. The recent report of the UN panel headed by L. K. Jha has dealt with several technical aspects of the host countries and the MNCs.

Some are of the opinion that foreign investments in the country should be encouraged. This argument underlines that the saving gap will be filled by MNC device. But actually this is a delightfully vague phrase. There are several inadequacies in this argument even if one accepts the political promise that there is no harm in mortgaging economy to the Multinationals.

The consequences in India of her embracing the MNCs to promote accelerated economic development, resources mobilisation, reduction of key resource scarcities, and to facilitate transfer of technology and improve balance of payment position can be analysed only in relation to the past and the other countries' experience and future consequences.

During 1970 the MNCs operating in India remitted abroad about 120 million dollars. This was 6% of India's total exports of 2000 million dollars for that year. The same was 16% in Mexico. This clearly shows that the earlier stage was in favour of the developing countries but now all is moving in favour of the MNCs.

If India wants to enjoy the indigenous technological development and attain the stable growth it should not encourage the Multinationals. Under the Indian conditions, whatever may be the merits of profit maximisation or optimisation, the growth of foreign capital monopoly bound to disrupt and ruin the life of many existing institutions. It is likely that MNCs will influence the fiscal policies through Government machinery in host countries if they are allowed on large scale.

Conclusion

In conclusion, it seems that a regime of Multinational Corporations will offer the underdeveloped countries neither national independence nor equality. It would turn the developing countries into branch-plant countries, not only with reference to their economic functions but throughout the whole gamut of social, political and cultural roles. The subsidiaries of MNCs are typically amongst the largest corporations in the country of operations, and their top executives play an influential role in the political, social and cultural life of the host country.

THIRD WINDOW

The Development Committee has unanimously supported the establishment, for one year, beginning from July, 1975 of a new intermediate lending facility in the World Bank. The new facility, informally known as the Third Window, is to lend on terms intermediate between those of IDA (interest free) and the Bank (8½ per cent).

The Third Window is essentially an interest subsidy fund ; the funds needed to finance disbursements under Third Window loans, which would be made over a one-year period, would have to be borrowed by the Bank. The amount of concessionary resources needed to finance the interest subsidization of such loans depends on both the volume of lending to be undertaken and the terms offered on individual loans. At an intermediate rate of 4½ per cent, between $225 million and $285 million in interest subsidization funds would be required to finance the lending of each $1 billion. Contributions to the Third Window would be voluntary.

The chief beneficiaries of Third Window operations would be those countries with annual per capita Gross National Products of less than $375, and especially the poorest among them. Though many of the poorest developing countries could not afford the intermediate terms of Third Window loans—exclucively at any rate—they would stand to benefit indirectly through a re-allocation to them of IDA funds from some middle-income countries which can afford intermediate terms.

Announcement

Next issue will be published on the 15th October, 1975 as a Special Number.

10th. August, 1975

Sd./ Himansu Roy
Editor

TEA PRICE STABILISATION

—THE INDIAN CASE

SECOND REVISED AND ENLARGED EDITION

Dr. HIMANSU ROY

"No wonder that profitability has decreased to an extent that fresh investments are difficult to make and in a capital hungry money market it has become difficult to raise fresh funds to develop the tea industry. Had Prof. Roy's idea's been acceped...such a situation could have been avoided...Prof. Roy's monograph should provoke serious thinking about the future growth of the tea industry in India."—*The Economic Times, Bombay.*

"This is an important work in the study of locating the basic causes of price instability in the country's tea industry. It constitutes the most ambitious attempt yet made to present a plan for the stable growth of the industry...His analysis is very bold, and the remedies he has suggested need to be carefully examined. Before concluding this reviewer would like to express his agreement with the author's hope that his "plan, in principle at least, would find favour in all quarters."—*Commerce, Calcutta.*

"Professor Roy might be right in his analysis...But his plan to put the industry on a sound footing is linked so much to Government regulations and actions that one is forced to conclude that it is beyond the present Government machinery to implement it."—*The Financial Express, Bombay.*

"People responsible for planning the industry's progress may appreciate Mr. Roy's views."—*Capital, Calcutta.*

"The book is a valuable addition to the limited works presently available in the subject and those who are interested in tea industry would certainly benefit from the book."—*Indian Journal of Agricultural Economics, Bombay.*

"You have not only my congratulations on your book but every good wish for the successful development of your ideas and plans for India."—*V. D. Wickizer, Author of the Tea Under International Regulation, Stanford, California.*

"It is a very good study of the problem."—*M. V. Mathur, Member, Plantation Inquiry Commission; Vice-Chancellor, Rajasthan University, Rajasthan.*

"You have evidently devoted much thought and painstaking research to the study of this intricate problem".—*B. N. Adarkar, Deputy Governor, Reserve Bank of India, Bombay.*

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ECONOMIC AFFAIRS

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Rupee Delinked

On the 24th September 1975 the Government of India came out with a historical announcement that rupee was delinked with pound sterling and that henceforth the exchange value of rupee would be determined daily with reference to the exchange rates movements of the currencies of a selected number of countries who were India's major trading partners. Pound sterling will, however, continue to be used by the Reserve Bank of India as its currency of intervention, i.e. the rupee exchange rates will be expressed in terms of pound. The Reserve Bank of India has announced its new buying and selling rates at Rs. 18.26 and Rs. 18.36 for a pound, respectively, so also the forward rates at Rs. 100 for £ 5.4894 for three months, £ 5.5019 for six months, and £ 5.5144 for nine months.

The Government justifies its present action on the ground that pound sterling has undergone rapid depreciation and "in the altered circumstances, it is necessary to move immediately to a new arrangement which, on balance, may be expected to impart a greater measure of stability to our exchange rate and in consequence to our international transactions." It is also made clear that the new arrangement is a measure to deal with the transitional situation during which a large number of major currencies have been floating or seeking ways for stability awaiting the IMF's evolvement of a durable system of exchange rates.

Pound sterling came under a heavy selling pressure in May 1972 so much so that it was made to float on June 23, 1972. India and fourteen other sterling area countries, in spite of this plight of pound, retained their relations with it, while others left the sterling area and linked their currencies with gold or United States dollar. After the float the pressure on pound was not decreased ; it faced a depreciation of 10 per cent from its Smithsonian parity. During this period India availed of the facility of wider margins of 2.25 per cent and the median rate was then fixed at Rs. 18.80 for a pound, and this was changed a few months ago to Rs. 18.60. India Government's stand to cling to pound-on-float during all that time could not be explained by financial analysis. It may possibly be that the present political strain with Britain has led the Government to revise its earlier decision ; certainly, although belated, much to the advantage of the country's economy. For the United Kingdom is now only one of the major trading partners of our country and has been receding with the expansion of trade. This apart, in these days of foreign exchange turmoil throughout the world when all other important trading countries have taken the independent stand to tide over the individual crisis by whatever means available, it would be a mere folly to go linking with pound, which has lost its prestige of reserve currency. It may however be the beginning of India's silent severance of connection with the Commonwealth. But then that will be only a formal matter. For the entry of Britain in the EEC has already sealed the fate of that history-bound master organization.

The relevant point is how and how far the rupee will be benefited by this new arrangement. It is easily understandable that a free rupee can be made more discretionary and hence logical in promoting the country's foreign trade and stabilizing the rupee rates And here lies the danger as well. For discretion is a delicate weapon. If misjudged or misfit with any point of time it may cause to pay a heavy penality which the country's economy can hardly bear. The use of discretion with prudence presupposes an efficient monetary authority which can act best at the right moment. India's problem is the non-possession of such an authority. Another point is, to act freely flouting all possible internal and external political and other pressures. Soviet Union has shown that path very pointedly to us when recently its foreign exchange rate clashed with rupee rate, although it is a very friendly country of India. It goes without saying that the country should continue to strive for a lasting solution through an international exchange system in the line France is pleading for, namely, a fixed parity with possible variations.

"U.S. policy is to have our own exchange rate determined essentially by market forces, and not by arbitrary official actions."

—Willian E. Simon,
Treasury Secretary, U.S.A.

Review

Peasant Society in a Changing Economy, George Rosen, University of Illinois Press, Urbana, U.S A. 1975, Price $ 8.95.

Struck by some similarities in the social structures of the Philippines, Indonesia, Thailand, and India Mr. George Rosen felt that there was an opportunity to apply the interdisciplinary framework, and the present book is the outcome of it. The intents of the study are not only to point out the basic similarities of these countries but also to compare them, and draw some common implications for public policy decisions.

For purposes of convenience the term "peasant society" is used to describe the ongoing social system of these countries. Hypothetical though, the "peasant society" is the combination of rural society and social organizations of both rural and urban sectors. It has a "multiplex character". Then reviewing the multiplex character of the "peasant society" of each country he has traced the following important similarities : family is the basic unit of social organization, hierarchical relations among families, patron-client relationships that serve to protect individual families, farming is generally regarded as the 'good life' and trading is considered an inferior occupation, respect towards the government and for the urban centres, political success is a proof of virtue, and attempts are made at all levels to avoid open conflicts and reach consensus.

There are some noticeable differences as well. The Philippines and Thailand are much advanced economically, and India and Indonesia are over-crowded. These and the varying strengths of similarities make much "differences in the functioning of the countries' political systems and government bureaucracies, and ultimately differences in their agricultural and industrial development policies and achievement."

Mr. George Rosen then draws some implications for policy. They are in real sense only some suggestions common for all the four countries. They are not unknown to this world or elsewhere, even in emphasis. As for instance, agriculture must continue to be the main source of employment, the government must play the major role in creating and expanding infrastructure, the irrigation system should be modified and extended, the government should play an active and initiating role in promoting industry and it should not use scarce administrative and management talents to directly run a manufacturing enterprise, trade control should be discouraged, effective capital market should be developed at the government initiative, domestic entrepreneurs should be rewarded for developing and using labour-intensive technology, and equality in sharing the national income should be ensured. He warns these countries that "a Chinese type, or of a Mexican type, or led by the military or by students" revolution will take them over if these minimum reforms are not made. All this is all right. But the difficulty with Mr. George Rosen is that he has banked too much on similarities and too less on the differences in ideological impulses, and in cultural, ethnical and psychological impels. The result is that his common front suggestions have little meaning to the countries when studied from the individual standpoint. Furthermore, he believes in reforms. India, at least, believes in radicalism. What is going on in India is a conflict between reforms and radicalism. For the same reason his comment that the victories of Mrs. Gandhi's New Congress Party in 1971 and 1972 were due to promise for reform is unacceptable. Mrs. Gandhi swept the polls with the protest-votes—protest against reforms by radicals, against all forms and measures of existing values ; not that much or anything was expected of her regime. Within limitation, the book has successfully developed the common problems and the aspirations of India, Indonesia, Thailand and the Philippines. It will satisfy the intellectual curiosity of the readers about the changing "peasant society" of this part of the world.

Economics of Rural Change, G. C. Mandal and Associates, Firma K. L. Mukhopadhyay, Calcutta 1974, Price Rs. 30.00.

The present study attempts to tackle some root questions relating to the Plan activities in bringing about the economic and cultural changes in the eastern part of rural India comprising West Bengal, Bihar and Orissa as represented by 19 villages which were surveyed and resurveyed for this purpose. The surveys reveal that the rural households have a tendency to break up, there is a marked tendency to take up agriculture as an occupation, the number of owner-operators in lands has increased, the farm income has increased, although the surplus for investment has remained too low as yet, the

(Continued on page 432)

An Alternative Planning Model For India

Chandra Shekhar A. K.*

1. Introduction

The model adopted for the Fifth Five Year Plan for India by the Planning Commission is a significant improvement on the ones adopted for the earlier Five Year Plans. The improvement is two-fold—(a) planning has been extended to more disaggregated levels than hitherto, detailed planning of outputs having been done for 66 sectors ; and (b) for the first time the distributive aspect has been explicitly incorporated in the model, projections of distribution of consumption having been done by 27 consumption classes. The above improvement in the plan model implies a much stronger data base available now to the planning machinery. A 66 × 66 matrix of intersectoral material-input coefficients, a 66 × 66 matrix of imported input coefficients, sector-wise estimates of coefficients of gross fixed and inventory investments, estimates of consumption by 27 consumption-classes tested for a long-normal fit by the National Sample Survey, etc., to name only a few of the items of data, have all gone into the detailed calculation of the Fifth Plan estimates.

Despite the above significant improvement in the model, it yet retains certain features, which, even granted that the plan is implemented to the letter, can have serious disequilibrating influence on the economy. The disequilibrating influence refers to demand-supply imbalance at the disaggregated levels in both factor and commodity markets. The objective of this paper is two-fold—(a) identify these disturbing features of the Fifth Five Year Plan model, and (b) build up an alternative model, which eliminates or greatly weakens these disturbing features. The following two sections of this paper will take up the above two aspects in the same order.

Calcutta.

2. The Fifth Plan Model—A Review

The basic framework of the model is set out below to facilitate our review. In so setting out, we have left out certain aspects so as to highlight the essential aspects of the model and its disturbing features. The aspects left out are (a) inventory investment, (b) indirect taxes, (c) sector-wise computation of imports and public production, and (d) separate projections of consumption by rural and urban populations.

(a) Unknown Variables :

Y^t_t gross domestic product in year t

S_t gross domestic savings in year t

M_t total imports of goods and services in year t

C_t private consumption in year t

I_t gross investment in year t

X_{it} output of sector i in year t

C_i consumption from sector i in year t

(b) Exogenous Variables :

E^{*t} total exports of goods delivered by sector i in year t

I^{*t} total investment goods delivered by sector i in year t

E^{i*t} exports in year t from sector i

P^{ti} population in year t

(c) Parameters :

r^t annual growth rate in gross domestic product in year t over the previous year

k_t incremental capital-output ratio

a_{ij} inputs from sector i per unit output of sector j in year t

p_{ij} proportion of private consumption of sector i to the total consumption of the people in the jth expenditure class.

The Plan Model :

$$Y^t = Y^{t-1}(1+r^t) \qquad \text{(for } t=0, 1, 2, \ldots, 5\text{)} \qquad (1)$$

$$I = \sum_t I^t = k(Y^5 - Y^0) \qquad (2)$$

$$S^t = I^t - (M^t - E^t) \qquad (3)$$

$$X^t_t = \sum_j a_{ij} X^t_j + I^{*t}_i + E^{*t}_i - M^t_i \qquad \text{(for } i, j = 1, 2, \ldots, 66\text{)} \qquad (4)$$

$$C^t_i = \sum_j p_{ij} W^t_j \qquad (j = 1, 2, \ldots, 27 \text{ exp. classes}) \qquad (5)$$

$$W^t_j = 12 P^t V^t [\phi(Z_j) - \phi(Z_{j-1})] \qquad (6)$$

where : ϕ is a log-normal distribution function with zero-mean and unit-variance

V^t per capita monthly consumption in year t

$$Z_j = Y_j - \lambda = \lambda \log(x_j/v^t) - \tfrac{1}{2}\lambda \qquad (7)$$

where : x_j is the upper limit of the jth expenditure class.

A brief explanation of the above equations is now in order. Eqn. 1 explains the growth of gross domestic product at variable year-specific growth rates. Eqn. 2 shows the connection between the gross investment and gross domestic product through the incremental capital-output ratio, k. Eqn. 3 gives the savings-investment equilibrium condition adjusted for net foreign trade deficit. Eqn. 4 determines the sectoral gross output levels through a Leontief-type input-output sub-model. Eqn. 5 gives sectoral demand levels through a consumption matrix. Eqn. 6 estimates total consumption by class through a log-normal consumption distribution function. Eqn. 7 is a transformation of per capita consumption for use as the explanatory variable in the log-normal distribution function in eqn. 6.

With the basic model before us, we can readily appreciate the strength of the major points of critical review of the model highlighted in this paper. Firstly, the model assumes that the distribution of aggregate consumption is log—normally dependent only on the per capita consumption level for the period irrespective of the sectoral distribution of capital stock and investment. The high fit for log-normality found as per National Sample Survey studies for the *initial aggregate* distribution of consumption can be accepted without question. What is questionable is the extension of such log-normality assumption to the distribution of the *incremental* consumption generated by the plan, whereby probabilistic determinism is carried much too far. Acceptance of such a determinism in effect would oblige us to abandon planning as an instrument for altering the distributive pattern prevailing in our society. Even apart from this defect of fatalism implicit in the model, the assumption of independence between sectoral distribution of investment and the distribution of the incremental income and consumption is not a theoretically valid one. Technologies obtaining in individual sectors are not distributively indifferent. In ignoring this defect, the model is likely to generate additional incomes which will be distributed differently from what the model assumes. This in turn will generate a pattern of sectoral demands which will be different from the sectoral outputs planned. This will therefore lead to disequilibria in the commodity markets at least insofar as the incremental output is concerned. In our opinion, the use of a probabilistic distribution function is grossly out of place in a planning exercise, where altering the existing distributive pattern is in essence a major goal of planning.

Secondly, the manpower-link between investment and income generation is lacking in the model. This link is necessary not merely for lending in academic elegance to the model, but for ensuring the necessary balance between supply of and demand for different categories of manpower. Educational and training expenditures are intimately related to the changes in the stocks of different types of manpower. This missing link in our plan model can cost us under—, over-or mis-allocation of resources in educational and training activities, with the resultant factor market imbalances at the disaggregated, levels. Such imbalances give rise to undue hardships on the unemployed, civil strife especially among the educated unemployed and waste of scarce national resources allocated to education and training. If education and manpower plans are made an organic part of the economic planning model itself, the distributive pattern will become an endogenously determined aspect of the plan rather than a probabilistic accident. The necessary degree of sophistication in the matter of manpower mobility and productivity change can then be rationally planned and incorporated in the model explicitly, as is done in the USSR and some east and west European countries.

These two features in our view are the major shortcomings of the plan model, which need correction. In the next section, we shall develop an alternative model, which will fill in the above two shortcomings and moreover attempt at incorporating additional improvements.

3. An Alternative Planning Model

A major point of departure in our approach in developing the alternative model will be that our model will be an incremental one as against the planner's aggregative model. The advantage with the former approach is that initial market imbalances can be very explicitly reduced or eliminated in the manner of policy variables. In this section, we shall first set out the basic alternative model, which will satisfy only aggregate equilibrium requirements, ignoring foreign trade and equilibrium requirements at the disaggregated levels. Subsequently, relaxing these restrictive assumptions in stages we shall extend the equilibrium relation to the disaggregated levels also, open the economy to foreign trade and finance. The 4 points ignored in reviewing the Fifth Five Year Plan model and set out at the start of section 2 will continue to be ignored in this section, save that regarding sector-wise estimation of imports. We hasten to add, however, that once the alternative model set out below is made acceptable theoretically it is a simple matter to incorporate the above left-out aspects.

3.1. Basic Planning Model:

(a) Policy Variable :

r average annual rate of growth of gross domestic product

(b) Structural Variables :

Y_t gross domestic product in year *t*
C_t aggregate consumption in year *t*
S_t aggregate savings in year *t*
X_{it} physical output of sector *i* in year *t*
A_{it} final demand for output of sector *i* in year *t*
E_i net educational investment in year *t*
I_t net non-educational investment in year *t*

(c) Parameters & Knowns :

p_i value added per unit of output of sector *i*
w_p wage per worker of educational level *p*
e_p expenditure to educate a worker up to level *p*
t_p time needed to educate a worker up to level *p*
a_{ij} units of output of sector *i* needed per unit of output of sector *j*
l_{pi} no. of workers of educational level *p* needed per unit of output of sector *i*
k_i marginal capital-output ratio in sector *i*
c_1 marginal consumption propensity out of wages
c_m marginal consumption propensity out of non-wage incomes
$L^{*}_{p,0}$ no. of workers of educational level *p* unemloyed and available for employment in year 0 (if this value is negative, it signifies initial labour shortage)
S^{*}_{0} savings deficit at the start of plan in year *t* (if negative, this signifies savings surplus)

The equations of the model can now be set out as follows:

Growth equation :

$$Y_t = \sum p_i X_{it} = C_t + S_t = Y_0(1+r)^t \qquad (8)$$

Material input-output relation :

$$X_{it}=\Sigma a_{ij}X_{jt}+A_{it} \tag{9}$$

Square and flower brackets have been used below to indicate that the terms between them are elements of matrices, the dimensions mentioned below them are as subscripts.

Educational investment :

$$E_t=\underset{1xp}{[e_p]}\ \{\underset{pxn}{[l_{pi}]}\ \underset{nx1}{[X_{i,t+t_p}-X_{it}]}\ -L_{p,o}\} \tag{10}$$

Non-educational investment :

$$I_t=\underset{1xn}{[k_i]}\ \underset{nx1}{[\Delta X_{it}]} \tag{11}$$

Incremental consumption :

$$\Delta C_t=c_1\{\underset{1xp}{[w_p]}\ \underset{pxn}{[l_{pi}]}\ \underset{nx1}{[\Delta X_{it}]}\}+c_m\{\underset{1xn}{[p_i]}\ -\underset{1xp}{[w_p]}\ \underset{pxn}{]l_{pi}]}\ \underset{nx1}{[\Delta X_{it}]} \tag{12}$$

Incremental savings :

$$\Delta S_t=(1-c_1)\{\underset{1xp}{[w_p]}\ \underset{pxn}{[l_{pi}]}\ \underset{nx1}{[\Delta X_{it}]}\}+(1-c_m)\{\underset{1xn}{[p_i]}\ -\underset{1xp}{[w_p]}\ \underset{pxn}{[l_{pi}]}\}\underset{nx1}{[\Delta X_{it}]} \tag{13}$$

Incremental savings-investment balance :

$$\Delta S_t=I_t+E_t+S^* \tag{14}$$

Eqn. 8 sets out a simple growth model, equating the gross demestic product with the sum of the sectoral outputs. Eqn. 9 sets out the input-output model for computing sectoral gross outputs for given sectoral final demands. Eqns. 10 and 11 determine the educational and non-educational investments necessary to yield the planned increase in sectoral outputs. Eqns. 12 and 13 give the incremental consumption and savings during the year. Eqn. 14 ensures balance between the incremental savings and investment during the year after adjusting for the whole or part of the initial savings-investment gap. For the purpose of this sub-section, the structure of final demands is exogenously given. The equilibrium condition has been formulated here in yearly terms, but we may modify it to hold either only for the terminal year of the plan or all the plan years taken together.

3.2. Imposing Sector Balance Conditions :

Additional notations :

W_p	Total wages earned by workers of educational level p
$D(w)_i$	demand for output of sector i out of wage-incomes
$D(p)_i$	demand for output of sector i out of non-wage incomes.
$\overset{*}{D}_{i,o}$	unsatisfied demand for output of sector i at the start of the plan (if negative, this signifies excess supply in the sector) to be reduced during plan-period
$d(w)_{pi}$	ratio of consumption of output of sector i by workers of educational level p to their wage w_p
$d(p)_i$	ratio of consumption of output of sector i by non-wage earners to their income (incrementally).

All the above ratios are structural variables, save the last two which are parameters. The sector balance relations may be developed as follows :

Incremental wages by educational level :

$$\underset{1xp}{[W_p]} = \underset{1xp}{[w_p \sum_i l_{pi}(\triangle X_{it})]} \tag{15}$$

Sectoral incremental demands out of wages :

$$\underset{1xn}{[D(w)_i]} = \underset{1xp}{[W_p]} \; \underset{pxn}{[d(w)_{pi}]} \tag{16}$$

Sectoral incremental demands out of non-wage incomes :

$$\underset{1xn}{[D(p)_i]} = \underset{1xn}{[d(p)_i]} \left[\{ \underset{1xn}{[p_i]} - \underset{1xp}{[w_p]} \; \underset{pxn}{[l_{pi}]} \} \underset{nx1}{[x_{it}]} \right] \tag{17}$$

Sectoral demand-supply balance condition :

$$\underset{1xn}{[\triangle A_{it}]} = \underset{1xn}{[D(w)_i]} = \underset{1xn}{[D(p)_i]} + \underset{1xn}{[\overset{*}{D}_{i,o}]} \tag{18}$$

Eqn. 15 displays an array of total wages generated by the year's investment. Eqns. 16 and 17 estimate demands for outputs incrementally generated out of wage and non-wage incomes, respectively. Eqn. 18 ensures balance between the additional sector-wise supplies for final demand and the additional demands they generate through the manpower and wage linkage, with necessary adjustments for initial imbalances, $\overset{*}{D}_{i,o}$'s. $\overset{*}{D}_{i,o}$ is an exogenous or policy variable according as the initial imbalance is sought to be liquidated, fully or partially, during the plan year. In sectors like agriculture, where supply response to market conditions is sluggish, this variable is essentially a policy one.

3.3. Introducing Foreign Trade and Finance :

Additional notations :

J_t	incremental value of exports from all sectors in year *t*
M_t	incremental value of imports of all sectors in year *t*
$j_i t$	incremental exports from sector *i* in physical units in year *t*
$m_i t$	incremental imports into sector *i* in physical units in year *t*
$m(f()_{it}$	physical imports into sector *i* to meet its incremental final demand in year *t*
$m(i)_{it}$	physical imports into sector *i* to meet the incremental intermediate demand in the economy in year *t*
V_t	net export surplus intended to be drawn from past reserves in year *t*
F_t	foreign finance available in year *t*
m_{ij}	units of output of sector *i* to be imported per unit of output of sector *j*
$p(j)_i$	price received per unit exported from sector *i*
$p(m)_i$	price paid per unit imported for sector *i*
m'_i	units of output of sector imported per rupee of additional gross domestic product.

The third, seventh and eighth of the above variables are policy variables. The last four notations are for parameters. The rest of the variables are structural variables.

Incremental exports :

$$J_t = \underset{1xn}{[j_{it}]}\ \underset{nx1}{[p(j)_i]} \tag{19}$$

Incremental imports for final demand in physical units :

$$\underset{1xn}{[m(f)_{it}]} = (\Delta Y_t)\underset{1xn}{[m'_i]} \tag{20}$$

Incremental imports for intermediate demand in physical units :

$$\underset{1xn}{[m(i)_{it}]} = \underset{1xn}{[\Delta X_{it}]}\ \underset{nxn}{[m_{ij}]} \tag{21}$$

Total incremental imports in physical units :

$$\underset{1xn}{[m_{it}]} = \underset{1xn}{[m(f)_{it}]} + \underset{1xn}{[m(i)_{it}]} \tag{22}$$

Incremental value of imports :

$$M_t = \underset{1xn}{[m_{it}]}\ \underset{nx1}{[p(m)_i]} \tag{23}$$

External balance condition :

$$J_t - M_t + V_t + F_t = 0 \tag{24}$$

Revised sectoral equilibrium condition :

$$\underset{1xn}{[\triangle A_{it}]}\ \underset{1xn}{[D(w)_{it}]}+\underset{1xn}{[D(p)_{it}]}+\underset{1xn}{[\overset{*}{D}_{i,o}]}+\underset{1xn}{[j_{it}]}-\underset{1xn}{[m_{it}]} \qquad (18)$$

Revised incremental savings-investment balance :

$$\triangle S_t = I_t + E_t + F_t + S_0^* \qquad (14)$$

The above equations 8 to 24, with equations 14 and 18 modified by relaxing the restrictive assumptions mentioned at the start of this section, therefore, constitute our alternative planning model for India. Let us now evaluate the model by comparing whatever it has done with whatever it sets out to do. Firstly, our model has made no probabilistic assumption regarding the distribution of the incremental consumption generated by the plan investment. Secondly, our model ensures balance at the disaggregated levels in commodity and labor markets by incorporating educational investment and manpower as integral elements of the plan. Thus, the alternative plan model has done whatever it had set out to do. Let us mention in passing a point in favour of our model over the Fifth Five Year Plan model, viz. that the whole model is in increamental terms. This helps in highlighting the initial imbalances and the extent to which they are intended to be corrected during the plan period. Having summarized the strong points of our model, it is only fair now to say that our model still lacks certain niceties, e.g. labor mobility, productivity change, separate calculation of demands for rural and urban populations or supplies by public and private sectors, etc.. These aspects can however be easily incorporated in our above model, once its basic characteristics are agreed upon. Lastly, in our sector-wise calculations, we have preferred to use physical units and prices in computing value added, which implies that the sector has a fairly homogenous and measurable output. Where this assumption is not valid, we can use the income method where the notations for physical units will be factor costs and prices will be uniformly unity.

Conclusion

This paper identified the two basic disturbing features of the Fifth Five Year Plan model to be (a) assumption of probabilistic determinism in the distribution of consumption incrementally generated, and (b) lack of manpower and educational linkage and the associated danger of imbalances at the disaggregated levels of commodity and labour markets. This paper then proceeded to develop an alternative model to remove the above disturbing features.

Excess Capacity in Indian Industry

A MACRO-DYNAMIC APPROACH

G. Raghava Reddy* and B. Dasaradharami Reddy**

1. Introduction

'Excess capacity' is one of the characteristic features of the economics of imperfect and monopolistic competition. However, there is no agreement among economists with regard to its meaning and measurement. Professors Joan Robinson, E. H. Chamberlin, Sir Roy Harrod, Nicholas Kaldor, and Sri J. R. Hicks have their own versions of the concept of excess capacity. Though there are subtle distinctions in the debate, it is clear that excess capacity cannot exist in a competitive industry in the longrun. But perfect competition is an ideal of an economist which is far away from the world of reality. Imperfect competition and monopolistic competition are the chief attributes of modern industry and excess capacity is inherent in it. The extent of excess capacity, however, varies over time and space. To the extent that excess capacity has deleterious social consequences, the debate on it is welcome. 'Excess capacity' is used in this paper as the residual of installed capacity over utilised capacity. It is treated as synonymous with idle capacity, under-utilisation of capacity and surplus capacity. Excess capacity is prevalent in both developed and underdeveloped countries though the explanatory causes vary widely. An attempt is made here to explore some aspects of the extent and remedies for excess capacity in Indian industry in the context of planning.

2. Extent of Excess Capacity

Excess capacity in Indian industry is not a new phenomenon. In 1946, 41% of the industries utilised less than 50% of their capacity,

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26% of them utilised between 50-75 per cent and 30% utilised 75% and above of their installed capacity.[1] The position has slightly improved on account of the launching of Five Year Plans in the 1950's for the economic development of the country. As is well-known, planning involves creation of additional capacity by capital formation and an effective utilisation of installed capacity by better management as the rate of industrial growth is a function of both capacity creation and utilisation. It is explicitly stated in one of the official releases that "Industrial production in any time period depends both on the available stock of productive capital and the extent of utilisation of the existing capacity."[2] But industrial growth rate in India has lagged far behind the targeted growth rate on account of the failure to create capacity on time and the wide-spread under-utilisation for capacity. For example, the average annual industrial growth rate was only 3.9% for the Fourth Five Year Plan as a whole, whereas the targeted rate was 8-10%.[3] Data on the utilisation of capacity are given in table 1.

Table 1

Capacity Utilisation in Selected Industries

		Average (Weighted) Utilisation Ratio		
Industry-group	Weight	1968-69	1973-74	Change
Basic Industries	6.070	73	63	—10
Capital goods industries	4.046	54	59	+ 5
Intermediate goods industries	7.687	83	75	— 5
Consumer goods industries	7.678	95	77	—18
All selected industries	25.48	78	70	— 8

Source: IDBI Annual Report 1973-74, p. 5.

It is seen from Table 1 that there has been a decline in the average capacity utilisation from 78% in 1968-69 to 70% in 1973-74. Decline in the utilisation was the highest in consumer goods industries followed by basic industries. There was however a marginal improvement in the case of capital goods industries.

3. The Repercussions of Excess Capacity

The consequences of excess capacity are well known. In a planned economy it inevitably results in the actual rate of growth lagging behind the planned rate of growth as is evident from the experience of the fourth plan. It thereby contributes to the failure of the plan and the deceleration of economic growth.

It is difficult to quantify the loss of output and income resulting from the under-utilisation of capacity, Very few studies are made in this direction. Table II gives some details relating to this aspect.

Table II

Loss of Output and Income due to Idle Capacity in 1967-68

	Rs. in crores
A. On 100% capacity utilisation basis	
Value of output	
Potential output	10,855
Actual output	8,435
Loss of output	2,420
Income (Net domestic product)	
Potential Income	2,772
Actual Income	2,154
Loss of Income	618
B. On 90% capacity utilisation basis :	
Value of output	
Potential output	9,769
Actual output	8,435
Loss of output	1,334
Income (net domestic product)	
Potential Income	2,495
Actual Income	2,154
Loss of Income	314

Source : Vadilal Dagli (edited) : A Profile of Indian Industries, Commerce (1935) Ltd., Bombay. P. 19.

Table 2 reveals that on the assumption of 90% capacity utilisation the potential output in 1967-68 should have been of the order of Rs. 9769 crores. The value of actual output (77.7% capacity utilisation) was estimated at Rs. 8435 crores. This involves a loss of output to the tune of Rs. 1334 crores and income of the manufacturing sector to the extent of Rs. 341 crores. The loss of output and of income are Rs. 2420 crores and Rs. 618 crores respectively, if 100% capacity utilisation is assumed. It is, however, reasonable to assume 90% utilisation of capacity as 100% capacity utilisation exists only in the world of text books.

Another consequence of excess capacity is the need to create extra additional capacity to attain the targets of production. During the fifth Plan capacity creation is expected to proceed at the rate of 10% per annum assuming 80% utilisation in order to achieve 9%

growth rate.[4] Capacity creation involves the investment of scarce capital resources. Capital resources have to be mobilised internally either at the expense of consumption or investment in other sectors. It also involves borrowing from abroad, thus affecting our objective of self-reliance. Self-reliance is also affected in another direction. Low domestic production due to idle capacity handicaps the fulfilment of the export targets. The trade gap widens and the country has to resort to borrowing from abroad to fill the gap. Thus excess capacity results in a high capital-output ratio whereas one of the central objectives of planned economic development is to reduce the capital-output ratio. A developing economy cannot afford the luxury of a high capital-output ratio and hence the need to reduce the level of under-utilisation of installed capacity.

The effects of excess capacity on employment are deleterious. Planned targets of employment cannot be attained in the presence of 30% excess capacity. The social purpose of planning is to that extent undermined. Idle capacity adds fuel to the fire of inflation. The last years of the IV Plan have witnessed hyper inflation (20-30% rise in general price level). Inflation is expected to give a boost to production—agricultural and industrial—but the production response in spite of planning is very poor in India as is reflected in the growth rates. The coincidence of inflation and wide-spread under-utilisation of capacity is one of the paradoxes of the Indian economy. As there are many forward and backward linkages especially in the case of basic and capital goods industries, the repercussions of idle capacity extend to the entire economy. The consequences of a poor rate of growth on the socio-economic situation in the context of a revolution of rising expectations lead to social unrest and political instability.

Hence, if the Indian drama of development is not to be a tragedy, idle capacity must be reduced to the minimum, if not eliminated completely. This involves an investigation of the causes of excess capacity.

4. Causes : Apparent and Real

The causes of under-utilisation of capacity may be classified into two types. They are (1) Apparent or surface and (2) Real or fundamental.

In the first category, labour unrest, material shortages, transport bottlenecks, power failures, managerial shortcomings, shortage of demand, ambitious projects planning, etc. are often included.[5] These aspects are controllable by and large and in a planned economy they can be fully controlled given the political will and determination. In the second category may be placed the ideological, institutional and structural elements of the industry and the economy. The operation of these factors is determined by the social framework and political ideology. There is some degree of uncertainty with regard to the behaviour of these forces. Hence, the difficulty in the management of these factors. If the factors that are placed in the first category may be described as endogenous or operational, those in the second may be characterised as exogenous and organisational. However, there is no Chinese Wall separating them. Certain interaction and relation is discernable between them. The tackling of the first group involves instrumental variables and the second policy variables.

The inflationary trend in the economy, inter alia, has resulted in the deterioration of industrial relations. The number of industrial disputes has shot up from 2627 in 1969 to 2912 in 1972,[6] reflecting the impact of the rise in prices. This has contributed significantly to the under-utilisation of capacity. Similarly the shortage of raw materials, spare parts and other inputs, both indigenous and imported, added their weight to the growth of idle capacity.

Under-utilisation of capacity during the fourth Plan increased from 29% to 43% in finished steel and 21% to 24% in cement. In the case of chemical fertilisers there was a marginal decline from 47% to 45%.[7] These industries have strong forward linkages with the rest of the economy and therefore the repercussions of under-utilisation of capacity in these industries have an adverse effect on the overall rate of growth.

Another important factor that has contributed to less than fuller utilisation of capacity is the shortage of power and transport. In spite of substantial investments made for power generation and transport development in the successive five year plans, actual achievements in terms of capacity attained were widely short of plan targets.[8] There have been substantial shortfalls in the utilisation of installed capacities,[9] Power and transport are public utilities with strong backward and forward linkages and the importance of their efficient functioning needs no emphasis.[10]

Managerial deficiencies are widespread in both the public and the private sector and naturally they have their own part to play in stepping up or down the industrial production. All these problems can be overcome by instituting appropriate methods of control such as linear programming, input-output matrix, operation research, etc. In a planned economy effective use of monetary and fiscal instruments is indispensable. Reduction of idle capacity by instituting appropriate measures aids the attainment of optimum efficiency and increased production and thereby contributes to the success of planned development.

The fundamental factors responsible for the idle capacity are the structural characteristics of the Indian industry. Indian industry is by and large monopoly centred and oligopoly dominated. The dominance of monopoly capital in Indian industries is a well-documented fact. What is perhaps less known is that the industrial monopolists restrict their output severly in order to reap high profits in the protected market.[11] According to one estimate, productive capacities are generally used at 54% of the potential in industries producing consumer goods and 22% in those making means of production.[12] The quantum of foreign capital in India is only a fraction of India's total reproducible capital probably less than even 1%. But its hold is very firm particularly in big industry, mining, plantations and banking.[13] In the context of inflation there is no incentive for the monopolist/oligopolist, domestic or foreign to increase production. They are reaping huge profits. The introduction of controls further induces them to indulge in black marketing rather than producing more. In actual fact, the monopoly/oligopoly firms do not increase their output, as their selfish interest lies in restricted production and high unit profits, not to mention the black market profits available in a shortage and insulated economy. It is the duty of poilcy makers to introduce fresh competition in oligopolistic market by licencing and encouraging other firms to produce even if these also come under the category of large firms.[14]

5. Instrumental variables

Better management of power, transport and basic industries will have a beneficial effect on the utilisation of capacity in the economy. Most of these industries, except cement, are in the public sector. The efficient operation of the public sector undertakings is, therefore, inevitable as the failure of the public sector contributes to the failure of the economy. Managerial deficiences in Indian public enterprise are not new. Administrative culture dominates over industrial culture and the community has to pay the cost. New methods have to be explored to attain managerial efficiency. The better management of the economy especially the price situation may provide a favourable environment for the emergence of peaceful industrial relations. Similarly, the trade policies including foreign trade may be appropriately modified to provide a steady flow of inputs and raw materials to industry. Deficiency of demand in an inflationary economy is a paradox. By applying scientific methods of investment and marketing it is not difficult to overcome this problem. The flow of credit to oil the wheels of industrial production can be attained in a development-oriented economy where public sector banking dominates the scene. The coordination and direction of production and distribution of resources are inherent in a planned economy and with the experience of 2½ decades of planning it is not difficult to achieve a reasonable degree of efficiency in this regard.[15]

6. Policy variables

The coverage of the institutional gaps and the correction of structural defects in the industrial economy that stand in the way of fuller utilisation of capacity are more difficult, but inescapable. In the second decade of development planning the need was felt for the correction of monopoly and oligopoly tendencies. Several committees and commissions have gone into this enquiry. New institutional/organisational devices have been initiated to check the growth of monopoly power. The industrial and financial policy of the Government of India has not succeeded in discovering entrepreneurs in large numbers to effect the diffusion of industry regionally and sectorally. The hold of monopoly/oligopoly on Indian industry continues unaffected. Unless the Industrial Policy is attuned to eliminate monopoly power, the efforts at mobilisation of resources will not result in further utilisation capacity. Regulation of monopoly may adversely affect industrial growth in the shortrun. The demand for growth and the requirements of social equity have to be reconciled by inducing monopoly firms to achieve optimum size so that consumers are able to get low-cost, low-price supplies. Special tax measures may be devised to syphon off their monopolistic profits without affecting their size and production. This is a challenge to the statesmanship in India. The joint sector is an excellent vehicle for the containment of existing oligopoly even it is an excellent promotional device for getting new units to break the oligopolistic circle.[16] In the longrun, however, the socialist transformation of the economy becomes a mirage if the hold of monopoly capital on Indian industry is not eliminated,[17]

7. Summary

Excess capacity is inherent in modern industry as it is characterised by monopolistic competition and India is no exception. During the fourth Plan excess capacity in the Indian industry has increased from 22% to 30% leading to the failure of the plan targets. The repercussions of idle capacity on employment, output, income, trade and welfare are severe. Economic growth, self-reliance and social justice cannot be attained in the face of wide-spread under-utilisation of capacity. The public sector which is expected to set a model to the private sector is not free from this malice. In fact, on account of its strong forward and backward linkages its excess capacity resulted in the creation of excess capacity in the private sector. It is not implied that private sector is not guilty of this phenomenon. The existence of monopoly/oligopoly on a large scale results in idle capacity. There are strong inter-relationships. In a development-oriented economy it is a paradox that under-utilisation of capacity resulting in the wastage of scarce resources is on the rise. The causes may be grouped under two heads--apparent and fundamental. It is more difficult to tackle the latter than the former. Strong political determination and statesmanship are required to take the economy on the path of development by instituting effective policy and instrumental variables. The socialist transformation of the Indian economy cannot be achieved without substantially reducing, if not completely eliminating, the idle capacity.

References

1. C. N. Vakil and P. R. Brahmanand, Planning for an Expanding Economy, Vora & Co., Bombay, 1956, P. 23.
2. Government of India, Economic Survey, 1974-75, PP. 12-16.
3. IDBI, Annual Report, 1973-74, P. 4.
4. Ibid. P. 5.
5. Govt. of India, Economic Survey 1974-75, PP. 12-16.
6. Govt. of India, Indian Labour Statistics 1973-74, P. 152.
7. IDBI, Annual Report 1973-74. P. 65.
8. V.K.R.V. Rao, et al, Inflation and India's Economic Crisis, Vikas, Delhi-6, 1973, P. 51,
9. Govt. of India, Report of the Committee on Unemplyment, May 1973, PP. 143-147.
10. Govt. of India, Draft Fifth Five Year Plan 1974-79, Vol. I. P. 100.
11. R. K. Sau, Indian Economic Growth. Orient Longman, 1973, P. 48.
12. Paul Streeten and Michael Lipton (EDS), The Crisis of Indian Planning 1968.
13. R. K. Sau, Indian Economic Growth, Orient Longman, 1973, P. 44.
14. V.K.R.V. Rao, et al, Inflation and India's Economic Crisis, 1973, P. 47.
15. Govt. of India, Economic Survey 1974-75, PP. 12-16.
16. V.K.R.V. Rao, et al, Inflation and India's Economic Crisis, 1973, P. 47.
17. The Indian Economic Journal, Vol. XXI, No. 3, PP. 186-201.

Agriculture in Orissa and a Strategy for its Revitalisation

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Agriculture is the predominant sector in Orissa. During 1970-71 it contributed as much as 55 per cent of the total state income of Rs. 548 crores at 1960-61 prices which is a little more than the national average. Orissa has 3.4 million cultivators and 1.9 million agricultural labour out of a total working population of 6.8 million. Thus 5.3 million or 76 per cent people of the total working force of the state earn their living from agriculture as against 69 per cent for the country. The concentration of working force on agriculture in the state has gone up from 70 per cent in 1951 to 76 per cent in 1971, while the corresponding percentage for India has declined from 70 per cent to 69 per cent during the same period. This shows the backward character of the state economy with agriculture moved to support more than three-fourth of the state's working force by providing them with subsistence employment.

Land use

Of the reporting area of 15.5 million hectares in the state, the net area sown accounts for 38.5 per cent, forests 23.1 per cent, land not available for cultivation 16.4 per cent, other uncultivable land 16.5 per cent and fallow land 5.5 per cent. The net area sown per cultivator in Orissa stands at 1.78 hectares in 1968-69, as against 2.79 hectares in Maharastra, 2.70 in Gujarat. 2.52 in Rajasthan, 2.51 in Haryana, 2.46 in Karnatak, 2.37 in Punjab, 2.27 in Madhya Pradesh, 1.95 in Kerala and 1.87 in Andhra Pradesh. There may be some marginal scope in Orissa for increasing the per capita availability of net area sown by bringing cultivable waste lands under the plough. However, much scope is limited and a significant increase of the agricultural production in the state cannot be obtained by extending the area under cultivation.

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Cropping pattern

Out of a total gross cropped area of 7.6 million hectares, food crops alone account for 73 per cent and the remaining being devoted to non-food crops. Food crops account for 65 per cent of the total agricultural production, rice alone accounting for 55 per cent of the total gross value of the output. Non-food crops consisting of sugar cane, jute, groundnut, tobacco, potato, dry chillies, mustard, etc. account for the remaining 35 per cent of the total gross value of the agricultural output. This shows that the contribution of non-food crops to the gross value of the total agricultural output of the state is relatively more than its share of gross cropped area, showing a higher productivity than the food crops.

However, Orissa is largely a single crop state, rice being the main stay of its agricultural economy, notwithstanding the recent trends of expanding areas under wheat cultivation in the coastal districts and cash crops in other parts of the state. Therefore, any damage to its main crop rice either by droughts, or floods or cyclones spells disaster for millions of people and causes dislocation to the economy of the state.

Agricultural production

Rice is the predominant crop in the state accounting for 11.9 per cent of the total area under the crop and 11 per cent of the total output in India. Next to rice, pulses, jute, potatoes, tobacco and chillies are important in the agricultural output of the state.

Index number of agricultural output in Orissa has increased from 100 in 1960-61 to 144.3 in 1970-71 with sharp fluctuations during the period. It dipped as low as 109.5 in 1965-66 from 136 in the preceeding year due to severe drought. Since 1965-66 agriculture in the state is lagging behind, in spite of its slow improvements in the subsequent years. During the decade of 1960-61 to 1970-71 the state was a victim of floods, droughts or cyclones for as many as five times causing large scale damage to its crops and resulting in setback to its programmes of agricultural development.

After a significant revival of the state's agricultural output in 1970-71, the crops were again considerably damaged in the following year due to unprecedented floods and cyclones in October 1971;

Again during the current year, 1974-75, the state faces conditions of large scale droughts and the kharif crop for the year is considerably low. Its devastating impact on the economy has already set in by the rise in prices of food grains and other agricultural produces.

During the decade of 1960-61 to 1970-71, there has been 44.3 per cent increase in agricultural output which means an annual average increase of 4.4 per cent during the period. Since total area under cultivation has registered an increase of 31.2 per cent during the period, increase in output due to improvement in productivity has hardly been 10 per cent.

Food grains output during the period has increased by 27.5 per cent while area under crops has gone up by 30.5 per cent implying a downward movement of productivity by 2.3 per cent. The per hectare yield of rice which is the main crop of the state is 1002 kgs as against national averags of 1094 kgs and 1944 kgs in Kashmir. The low rate of yield of rice in the state largely accounts for the backwardness of agriculture.

However, the production of non-food crops has shown some significant improvement during the decade as area, production and productivity have improve as much as 41.4 per cent, 182.8 per cent, and 100 per cent respectively.

Food grains output

Food grains output in Orissa accounts for about 65 per cent of the total agricultural output in the state. Total food grains output in the state has gone up from 40.14 lakh tonnes in 1960-61 to 51.51 lakh tonnes in 1970-71, the highest output being recorded at 54.3 lakh tonnes in 1968-69. The increase has been 28.3 per cent during the decade of 1960-61 to 1970-71 with a compound annual rate of growth of 2.5 per cent, almost same as the annual rate of growth of the state's population. The food grains output in Orissa in 1971-72 accounts for 4.4 per cent of the total output of food grains in the country which is marginally higher than the state's share of 4 per cent in the total population of the country. The state's average surplus of food grains in a normal year, if any, is marginal on account of low level of consumption of its people particularly of those belonging to scheduled castes and tribes. The surplus squeezed out to the market is a distressed surplus exchanged by the people for meeting their non-food requirements.

The trend of food grains output in Orissa fluctuates depending on the behaviour of the monsoon. During the period of 1960-61 to 1973-74 food grains output in the state was rather better in the years 1964-65, 1968-69, 1969-70. For all other years there were damages to the crops due to floods, droughts or cyclones.

During 1973-74 the food grains output in the state was hardly 42 lakh tonnes only. The consumption requirements of the state being 36 lakh tonnes and seed requirements for another 4 lakh tonnes, there was a statistical surplus of 2 lakh tonnes during the current year, hardly enough for maintaining stability in the market distribution and prices. It is further alleged that an estimated 40 thousand tonnes of food grains crossed the boundary of the state during the year due to high prices prevailing in the neighbouring states. This has resulted in a sudden acute shortage of food grains in the different parts of the state and a sharp rise in prices during August and September months of the year. The price rise was as high as to have been more than doubled in a couple of months. This created acute distress condition in the rural areas the evidence of which is available in emaciated children and old and invalid people pouring in large numbers at the gruel kitchens or at the free distribution centres. It is estimated that one million people of the state need relief until October 1975 in view of the all time low kharif production during 1974-75. The compulsory levy system which the state government introduced in the state for procurement for food grains for supporting the public distribution system has met with the increasing resistance from the farmers in view of the scarcity condition and large difference between procurement and free market prices. By the end of January 1975 hardly 40,000 tonnes of paddy have been collected and the prospects of improving the present procurement appears bleak.

II

PROBLEMS

The vulnerability of the state's agriculture to the fickleness of the nature and its low productivity particularly of rice, the predominant crop in the state, are largely attributed to the tardy progress made in (i) irrigation, (ii) agricultural inputs, (iii) institutional finance, and (iv) land reform measures.

(i) Irrigation

Water is the basic requiremet for agriculture. Orissa gets an average rainfall of 50"—60" and of this about 75 per cent is received by South-West monsoon during July and October. However, the rainfall is not evenly distributed throughout the state. Failure of rains during September and October months is enough to create drought conditions in the state, as it happened during 1974.

There are important rivers like the Mahanadi, the Rushikulya, the Brahmani, the Baitarani the Budha-Balanga, the Subarnarekha, the Salandi, the Bansadhara, the Buda, the Bahuda and the Indravati flowing in the state which have great irrigation potentialities. However except Mahanadi at Hirakud and Sileru rivers at Machakund no other rivers have been harnessed for irrigation purpose. Some of these rivers cause considerable damage to the crops in the coastal districts by their floods during the rainy seasons and almost they get dry after the monsoon when the agriculture is in dire need of water. Hardly 10 per cent of the net area sown were under permanent irrigation in 1965 which could be increased to 13 per cent by 1970-71, the second year of the fourth plan. Assuming that 2.5 lakh hectares are irrigated from private sources (almost same as areas irrigated by Govt. minor irrigation works) the net area under irrigation is 10,43 lakh hectares in 1970-71 which is hardly 17 per cent of the net area sown in the state that year. It is considerably less than the corresponding areas of Punjab, Tamil Nadu, U. P., Haryana, Andhra Pradesh, W. Bengal, Assam, Bihar, Kerala where it is 58.4 per cent, 43.2 per cent, 27.2 26.5 per cent, 25.6 per cent, 24.4 per cent, and 21.2 per cent, cent respectively during 1967-68.

Orissa, thus, lags much behind other states in the field of irrigation. Lack of irrigation facilities is the largest single factor for making the state's agriculture what it is. Assured supply of water can considerably mitigate the drought prone character of the state's agriculture, and help the cultivators raise more than one crop in considerable areas.

(ii) Agricultural Inputs

Seeds, fertilisers and pesticides are the major inputs necessary for making a break-through in agriculture.

Crop under HYV

Hardly 4 per cent of the areas under four major crops in the state have been brought under HYV as against 12.5 per cent in the country which reveals the extent of green revolution touching Orissa's fields.

Fertilisers and insecticides

The extension of the areas under HYV which is necessary for a break-through in the state's agriculture requires intensive use of fertilisers only next to water. The per hectare consumption of fertilisers in Orissa has increased from 1.4 kg in 1964-65 to 5.1 kg in 1971-72, which is far below the national average consumption of 14.5 kg per hectare and 52.6 kg in Punjab.

Similarly plant protection measures in the state hardly account for 4.4 per cent of the gross cropped area as against 21.2 per cent as the national average in 1969-70.

Farm Mechanisation

Farm mechanisation measures have been extremely slow in Orissa. Though the present stage of agricultural development in the state with unemployment and underemployment looming large in the rural sectors, the scope for mechanisation is limited ; nevertheless mechanisation particularly the extensive use of electric pump sets is essential for increasing productivity and for making farm units economically viable, by making it less dependent on nature.

Institutional Finance

Finance is another important constraint on the cultivators for taking up improved measures of cultivation. Progressive use of institutional finance in the place of credit from private sources which still has its stronghold on the poor farmers particularly among scheduled castes and scheduled tribes is essential for saving them from exploitation. However, progress in this regard has also been slow.

During 1970-71 the primary co-operative societies in Orissa advanced Rs. 8.7 crores to the agricultural borrowers. The average loan advanced per borrowing member was Rs. 280/- as compared to Rs. 541/- for the country and Rs. 1278/- for Gujarat. The percentage of overdues to outstanding loans was as high as Rs. 66/- in Orissa as against Rs. 41/- for the country. At the end of December 1971, the commercial banks advances to agriculture amounted to Rs. 1.6 crores in Orissa as compared to Rs. 78/- crores in Maharastra, Rs. 56/- crores for Tamil Nadu and Rs. 50 crores for Andhra Pradesh. Thus the advances of these commercial banks per hectare of the gross cropped area were Rs. 2/- in Orissa as compared to Rs. 81/- for Tamil Nadu and Rs. 25/- for the country. Low intake of institutional finance by the farmers in Orissa shows their lack of initiative mostly due to environmental constraints and acute poverty. Considerable spadework in this regard is needed to prepare the farmers to accept institutional finance for developmental purpose in the place of subsidy or credit from private sources.

Thus agriculture in Orissa is starved of water, fertiliser, insecticides, HYV of seed and funds for financing improvements. Moreover the cultivators in Orissa lack the required initiative and commitments for improving the productivity of land in view of the inequitable land tenure system prevalent until recently and concentration of holdings in the hands of a few. An army of agrarian proletariat of landless labour which is as high as 28.23 per cent of the total working force has little interest in land improvement measures and small farmers consisting of 66 8 per cent of the cultivating households owning only 30 per cent of the total land holdings and less than 5 acres each have little resources to effect improvements. Only 5 per cent of the cultivating households in the state owning 28 per cent of the total lands and more than 15 acres each are only in a position to make any improvement.

III

STRATEGY

Despite substantial expenditure by the Government on agriculture under the plans it has remained stagnant with low productivity not capable of even ensuring a minimum standard of living of Rs. 20/- per capita per month at 1960-61 prices to the bulk of the population depending on agriculture either directly or indirectly. Agricultural development in the state has been largely devoid of an effective and consistent policy. Investments in agricultural sector have largely been on ad hoc consideration without any perspect to stabilise it against the vicissitudes of nature and to obtain social commitment and initiative of the cultivating class for effecting improvement in agricultural productivity.

A realistic strategy of agricultural development in the state should aim at (i) obtaining the social commitment of the cultivators to take initiative for improving productivity, (ii) mitigating the vulnerability of agriculture against the vicissitudes of nature, (iii) augmenting the supply of inputs for inproving agricultural productivity. These objectives require the adoption of a five-fold strategy for agricultural development, such as, (i) land reforms, (ii) freedom of the cultivators from the age-old bondage of indebtedness, (iii) technological changes, (iv) varietal planning, (v) institutional changes.

Land Reform Measures

An equitable land tenure with the concentration of lands in the hands of a few and with a large agrarian landless proletariat toiling at a subsistence wage rate for a part of the year and facing starvation for the rest is detrimental to agricultural progress.

The intermediary tenures in the state have long since been abolished and the Orissa Land Reforms Act, 1960, has been passed to provide for the regulation of tenancies. However, the policy of the Government regarding a ceiling on land holdings and distribution of surplus land and Government waste lands among the landless have until recently been vacillating and halting consequently giving rise to an atmosphere of uncertainties in the rural sector. The eviction of tenant cultivators and their harassment in the hands of the rich land owners were frequent and the state mechinery was by and large not oriented to protect the legitimate interests of the weaker sections of the community. Land settlement operations not being taken place for many years, in large parts of the state there are no record of rights, which often involves the cultivators into unnecessary litigations and harassment. The absence of uptodate record of rights delays and dilutes the implementation of ceiling on landholdings and proper assessment of surplus lands. It adversely affects the productivity of agriculture as the cultivators are deterred from making permanent improvement in their lands.

Of late, however, Government appears to have been following a more effective policy by lowering the ceiling of land holdings and distributing the surplus and Government waste lands among the landless cultivators particularly among the scheduled castes and scheduled tribes. More than two lakh acres have already been distributed among the landless labourers in the state. However, in many cases the lands distributed are not really fit for cultivation and they need considerable investment to make them worthy of farming. Such surplus of land available for distribution may not be adequate enough to provide a minimum of economic holding to all the landless cultivators.

Nevertheless such a measured is of great social and economic significance. Lands in the hands of the tillers is a great moral boost and invests them with social dignity and economic self-confidence which are the prime requirements for raising productivity. Besides, the state machinery needs to be further reoriented for protecting the legitimate interests of the weaker sections of the people in land disputes so that it would invest the small cultivators with confidence that they would not be deprived of the fruits of their toil on their lands. Such a change in the agrarian social climate is essential for raising productivity from the soil. An integrated approach to land reform measures including ceiling on land holdings, distribution of surplus lands, uptodate record of rights and consolidation of holdings, etc. is a necessary motivation among the farmers for improving productivity of the land by adopting progressive practices.

2. Freedom from age-old bondage of indebtedness

Another measure of great social and economic significance deserving urgent attention is the freedom of the poor cultivators, particularly belonging to scheduled castes and scheduled tribes, from the age-old bondage of indebtedness. Bulk of the debts have been inherited by them. It is often said that a tribal cultivator is born in debt, bequeaths the debt after his death. Through the instrumentality of this age-old debt, village Mahajans and money lenders maintain their economic grip over the tribal economy and often deprive them from the fruits of their labour by purchasing their products at unfavourable prices. Efforts have been made in the past to provide relief to those tribal cultivators by passing appropriate legislations, but in actual operations they have been made futile. The only effective way to provide relief to them is by writing off their debt by a suitable Ordinance, as it has recently been done in U. P. and Bihar and by providing alternative sources of credit to them at appropriate time both for productive and for other social purposes. Arrangements should also be made for selling their products at reasonable prices. Without such radical measures it would not be possible to make a dent into their economy by assuring them the fruits of their labour. Without the basic social reforms other measures for improving agriculture in the tribal areas will tend to be ineffective, as they would be submerged in the manipulative practices of the traders and money lenders who still exercise a grip over their economic life.

3. Technological changes

A substantial rise in the agricultural output in the state can only be obtained by raising the per hectare productivity through technological changes which include water, fertiliser, insecticides, improved seeds and power.

(a) Water

In spite of the availability of water in the river system the state agriculture suffers from due either to inadequacies of water or devastating floods. Without a proper water management system for agriculture, its unstable character cannot be mitigated. As a long term policy the river system in the state needs to be tamed and the water resources to be harnessed both for irrigation and power. This is the long term solution for mitigating the dependence of the state's agriculture on the fickleness of the monsoon. However, since it needs huge investment for harnessing the river system, its practicability as a short-term measure is limited,

In view of this, the choice of the source of water and types of irrigation work should be on the basis of cost viability and soil character in different areas, Lift irrigation in the coastal districts and minor irrigation works in other interior districts as an insurance against drought, particularly in the context of the present drought situations deserve attention. In the present distress situation prevailing in the state, food for works programmes should be organised in rural areas particulary for tapping water sources wherever available for agriculture. For this a massive programme for the state on area-wise basis can be worked out on a shortterm basis and relief and works programmes for providing relief employment should have a content of developmental activity like digging of canals, building of embankments or constructing of wells, so that the cost effectiveness of such outlay can be available. If such orientation is done to expenditure outlays, national and international assistance can be available. Such an approach is necessary to strengthen agriculture at its most vulnerable points.

(b) Fertilisers, insecticides and improved seeds

These inputs are of strategic importance only next to water, for making a major break-through in agriculture, particularly by expanding areas under HYV.

The supply of these inputs needs to be coordinated on the area basis through Area Development Agency. For this agricultural development plans should be formulated on area basis through suitable planning agencies. Agriculture being conditioned by climatic variations, its needs are highly spatial in character. Therefore, area plans including forward planning are inseparable from making a proper assessment of input requirements and for ensuring its proper supply and administration. Uncertainties from this area should be minimised in order to provide a stable character to agriculture.

Black marketing, corruption and harassment in the supply of these inputs to the cultivators should be strongly dealt with as otherwise it would upset the programmes for stabilising agriculture.

Power

Expansion of lift irrigation programme as an insurance against drought depends on the ready availability of power. In fact water and power can go a long way in providing a stable character to the state's agriculture. However, the shortage of power has become a national phenomenon. Drought reduces power generation capacity from the hydro-electric projects when the need for power generation works is very great. The power base of the state should be significantly diversified and proper coordination and control should be brought about their use to curtail wastage.

However, as a long term policy the state's potentiality of generating power both from hydro-electric and thermal sources should be exploited on a priority basis, as power consumption in future years will go on increasing.

4. Varietal Planning

It is the failure of human ingenuity to attribute crop failures almost every alternate year to the erratic behaviour of the monsoon. Nature is not at our behest. It is, therefore, no good finding a scape-goat in nature always, for concealing our failure in planning agriculture properly. Climatic uncertainties should be considered as a factor to be reckoned with while formulating agricultural plans. Therefore, it is necessary to adopt varietal planning in agriculture on area basis. This involves adopting varietal zoning, varietal replacement for each agro-climatic and soil area in the state for detailed agricultural programming. Adequate buffer stock of seeds of quick yielding strains of cereals, millets pulses etc. should be built up so as to help in introducing mid-season corrections in crop scheduling during abnormal weather.

The rains failed during July, August, and September months of 1974. However, it did come in October and its late arrival could have been utilised to a great extent for the benefit of agriculture, if mid-season corrections in rescheduling crops would have been possible through advanced varietal planning. Therefore, it is the human failure to adopt agriculture to the changing behaviour of nature which is largely responsible for creating a large scale economic distress among the people. It is really surprising that in spite of the occurence of droughts, floods and cyclones for six times in the state during the period of 1960-61 and 1972-73, we have not yet grown wiser enough to understand the climatic behaviour and adapted our agriculture accordingly through varietal planning.

An economy-cum-ecology based land use plan involving appropriate admixture of agriculture, animal husbandry, fisheries and forestry should be developed for each block, so that one would partly neutralise the failure of the other and would not throw millions of people out of their homes to join the begging procession, simply because the rains were delayed by a couple of months, as it happened during 1974.

5. Institutional Changes

Such a strategy of agricultural development needs changes in our planning approach and institutional frameworks. The present practice of macro planning in the field of agriculture with investment programme on projects often bears no relevance to the special character of the areas to which it is directed to serve. Regional planning approach with area development programmes that take account of the spatial characteristics including climatic variations is more effective to provide realistic touch to the agricultural development programmes. Agriculture being highly spatial in character, area plans are most effective instrument for its development.

Multiple institutional agencies like SFDA and MFDA, etc. attempt to fill up the institutional gap for meeting the spatial requirements of certain categories of cultivators in certain areas. However, multiple agencies often work either at cross purposes or involve duplications and wastage of scarce resources. Therefore, coordinated work in different areas through a common area development agency is more appropriate. Such agencies can better address to the problems of the different categories of cultivators on the basis of a common and coordinated agricultural programme for the area. Mid-season corrections in agricultural practices can be possible if agricultural problems of the area are administered by a single agency staffed with technically skilled people. Such an institutional framework is better equipped for providing stable character to the state's agriculture by making timely changes in its operational programmes to counteract the unruly behaviour of the nature.

On Different Criteria of Measuring Employment and Unemployment of Agricultural Labour

J. R. Gupta*

The extent and magnitude of rural poverty have always attracted the attention of the academicians and policy-makers. Lately the establishment of such agencies as CSRE, SFDA, MFAL and other employment oriented projects is the outcome of such concern. These schemes have specially been designed to strengthen the economic base of the rural poor, majority of whom are agricultural labourers. According to the 1971 Census 68.62 per cent of the working force in India was engaged in agricultural sector, the average for the rural and urban areas being 80.86 and 11.07 per cent respectively. Further, of the 81 per cent workers of rural areas as much as 25 per cent were agricultural labourers. In view of the fact that the availability of gainful employment opportunities is the principle factor governing their economic lot, the present study intends to review the different criteria used and to suggest the appropriate criterion in the context of Indian economy.

The classic works, in this regard, are of the First and Second Agricultural Labour Enquiries. In the Firs Agricultural Labour Enquiry the definition of the term agricultural labour was applied only to those households which were employed for wages in the process of crop production. According to the First Enquiry, an agricultural labour household was one for which the principal occupation of either the head or 50 per cent or more of the earners had agricultural wage employment. The principal occupation for a person was defined to be that occupation in which the person was engaged for 50 per cent or more of the total number of days worked by him during the previous year. Considering that a labourer could not recapitulate the number of days

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worked in the preceeding year, The Second Agricultural Labour Enquiry shifted its emphasis from employment to income so far us the definition of an agricultural labour was concerned. In the Second Agricultural Labour Enquiry the principal occupation of a person was defined to be that occupation which was the major source of his income during the previous year. Further in the Second Enquiry, the scope of the term "agricultural labour" was widened to include hired employment in other agricultural occupations as well as like dairy farming horticulture, raising of livestock, bees, poultry, etc. in addition to the cultivation of land for farming purposes. Both the enquiries, however, applied the period approach (time criterion) for measuring unemployment.

On the concept of identifying the households of agricultural labourers, S. C. Gupta(9) remarked that "the most useful concept of an agricultural labour family would be one according to which every family in which any member is employed in agricultural labour for any period, whatsoever, is enumerated as an agricultural labour family," This fact seems to have been corroborated in the recent studies (CSRE) conducted by the different research institutions in India on behalf of the G.O.I. In the studies the institutions were asked to conduct a survey in their respective states to measure employment and unemployment of rural wage-paid workers. The households to be included in the survey were those whose at least one member was ready to work for wage paid employment for a continuous period of three months. As it is examined further, this latter approach is superior to the Westernized one as suggested by S. C. Gupta.

On the measurement of employment, unemployment and self-employment, in the First Agricultural Labour Enquiry, wage employment for half the day or more was counted as full day's occupation and less than that was ignored. All those who worked even for a month were taken to have been gainfully employed. In the Second Enquiry the intensity with which the activity pattern, major or minor, was followed was duly taken into account in estimating the extent of employment. For this purpose intensity classes laid down were full, half, nominal and nil. A full day's work meant three-fourth or more of the nominal working hours i.e. 10 hours per day. More than one-fourth and less than three-fourth of the nominal hours was considered as work with half intensity. Less than one-fourth was deemed as nominal work with one-eighth intensity and nil intensity signified no work done during the reference period.

Mahalanobis, P.C.(10) while examining the various methods for measuring unemployment has forestalled the Raj Krishna's income approach to measuring unemployment. He observed that a hypothetical normal output per unit of time may be worked out and whether a person is turning out the full or only a part of the normal output may be ascertained. Thus the divergence between the two might be used to throw light on the extent of unemployment. Considering difficulties in evolving a norm of normal output, he suggested another measure, viz. in terms of normal earnings to examine whether a person was earning the full amount or a part of it.

Some guidelines for measuring rural unemployment have also been provided by S. V. Sethuraman (12), who has tried to examine the various complexities involved in measuring rural unemployment. The two-fold objective of his study was to review the approach taken on this question by the 'Committee of Experts on Unemployment Estimates' commonly known as Dantwala Committee on Unemployment[1] to sort out the several issues relating to rural unemployment and suggest a theoretical framework with a view to reducing the complexity of the problem and making it capable of solution.

The Expert Committee report suggests that the unidimensional measure of unemployment, hitherto used by planners, be discontinued. Instead, the Committee recommends the 'estimation of different segments of labour force, taking into account such important characteristics as region (state), sex, age, rural-urban residence, status or class of workers, and educational attainment' for at least four seasons in a year. The Committee disagrees with the current procedure of classifying a person as employed or unemployed on the basis of his answer to the question as whether he worked for at least one day during the reference week or not. Instead it favours the identification of employment and labour force status of the population on each day of the reference week ; and this improved procedure is believed to indicate the extent of under utilisation of the available labour supply in the rural economy in the season concerned. The Committee, however, admits that this procedure will not indicate the number of unemployed persons or the requirement of additional full-time jobs. In order to estimate the latter figure the report adds, data on duration of unemployment, etc., must be collected from individuals who report unemployment throughout the reference week.

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[1] Since the main recommendations of the "Report of the Committee of Experts on Unemployment Estimates" has been discussed here as well as in the succeeding discussion, no attempt have been made to deal with these recommendations separately.

More specifically, the Committee appears to urge the collection of the following data for various homogeneous labour groups for at least four seasons : (i) hours worked ; (ii) hours still available for work : (iii) days worked ; (iv) days in labour force, and (v) duration of unemployment if the individual reports unemployment throughout the reference week. The report also urges the collection of data relating to the potential labour force such as additions to and withdrawals from the actual labour force. Whereas the first two items would indicate the level or rate of unemployment, items (iii) and (iv) would indicate the rate of unemployment during the reference season. The last item, together with some supplementary questions, will help us estimate the number of chronically unemployed.

In this context Sethuraman asks "how representative are the data collected in a reference week of the season as a whole ?" The protagonists of this approach argue that since the reference week is staggered over the entire season (or year) concerned, the survey results would reflect the situation in an average week in that particular season (or year). To Sethuraman, however, it is clear that this average week would be representative of the season only if the different weeks within the season are very similar in regard to the employment/unemployment situation. But if the level and/or rate of unemployment shows considerable variations even within a given season—which is very likely—then the arguments represented in the report in favour of seasonwise breakdown of data are equally valid here and generalisation based on the 'average' week for the season as a whole will be misleading.

For a moment, leaving aside this theoretical controversy in a study conducted on rural unemployment in Punjab, it has been found feasible that the entire year can be conveniently broken down in six seasons and the employment/unemployment data can be recorded from the selected rural labour force at the end of each season. Thus in our view it is better to concentrate on the same households for the year round and collect the data on employment and unemployment from these households than to vary the sample households from week to week. This might also create rapport for the investigators, which can also be used for eliciting more useful data.

In his theoretical framework Sethuraman has proposed the traditional demand and supply approach for measuring unemployment.

He has forwarded a number of new ideas, viz. while asking a lab(whether he is "available for work" on a given day, if he, being alr employed yet answers in affirmative, this will amount to den for overtime work. He also distinguishes between 'marketable" 'non-marketable' labour force. 'Non-marketable labour force' perf the role of eliminating the discrepancies in the patterns of den and supply through adjustments on the supply side, particularl the peak period. Since the policy-makers are preoccupied with generation of employment opportunities for 'marketable' la because non-marketable labour', by definition, is not willing to ' outside family farm. Sethuraman has assumed that the policy-ma like to provide jobs for all marketable labour who are offered in market at any given time and at a wage rate that prevails du the peak season. The author has argued that this objective not only ensure full employment but also stabilise the peak se wage rate. In our view this assumption appears to be hi unrealistic. Do we have enough resources to provide employment all the marketable labour at the peak wage rate ? The author candidly admitted this fact in the "notes" appended to the art In fact, in the peak season wage rates are pushed high due to simultaneous demand for agricultural labour by different farms the policy makers need not try to stabilise the wage rate at artificial high level. On the other hand, the primary intention of policy makers is to stabilise the employment opportunities and the wage rate. The various schemes implemented stand testimon the fact that the government fixes some maximum permissible wage (corresponding to off-season and not peak season wage rate) and t to ensure employment opportunities at that wage rate. Further viewpoint of Sethuraman, i.e. the availability of already emplc workers for more employment amounts to overtime work is untenable particularly in case of chronically underemployed persons

Another query to which Sethuraman has addressed himse that "does the estimate of 'hours available for work' provide us v a measure of unemployment ?" Since the total hours available work (including hours employed) is a function of the wage rate, estimate of 'hours available for work' will be a hotchpotch if wage rate is not held constant at a particular level. Since the c refers to a particular day or week, presumably the investgator ha his mind the going wage rate. It is not unlikely that the responc has a different wage rate in his mind. Thus the different estim of unemployment might be arrived at. The question seems not to be so tricky as Sethuraman has tried to make it to be. The investigator can simply ask the labourer at what wags rate he is available for work. The prevailing wage rate can also serve the job. But this does not appear to appeal to him as "at the going wage rate, there may not be any unemployment (except in the frictional sense) insofar as the wage rate is flexible and all labour is equally efficient". An unplausible assumption again. A flexible wage rate cannot solve the problem of unemployment particularly in the rural economy, where the wage rate is more governed by customs, traditions, and other factors.[4] It has been observed that even in the lean period the rural labour force prefers to remain idle to work below a certain stipulated wage rate. Thus it is argued that whereas wage rate is flexible on the upward side its downward movements are inflexible and wage flexiblity cannot solve the problem of rural unemployment.

Mr. I. Z. Bhatty(2) criticising the labour force approach, which requires two conditions to be fulfilled for qualifying a person to be treated as unemployed : (a) the person must be in the need of employment i.e, he must seek or be available for job, (b) the person must be involuntarily unemployed, has argued that since in this approach labour is treated as on individual unit and its employment is measured in time, this approach is not applicable where rural labour is self-employed. An alternative approach suggested by him is that of "effective employment". To him a household where labour is not effectively used may work on an average for a greater number of days but he will earn less. That is to link poverty with employment[2] (and unemployment), estimation of effective employment may be more useful. He argues that "interpreted in terms of effectiveness of employment instead of conventional unemployment a good part of mystery about rural unemployment would disappear" and further that "the concept of effectiveness of employment is relative, though for purely practical purposes, one might introduce an arbitrary norm."

Recently, Raj Krishna(8) while discussing the problem of unemployment in the country has suggested four criteria : (i) the time criterion, (ii) the income criterion, (iii) willingness criterion, and (iv) the productivity criterion.

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2. We shall examine shortly, however, that it is not possible to link poverty with unemployment. Therefore, if Mr. Bhatty intends to emphasise this relationship it will to be untenable.

The Time Criterion : In the NSS[3] labour force surveys employment, unemployment, and underemployment have been measured mostly on the basis of the time criterion. A person is defined as unemployed if he is gainfully occupied on at least one day during the reference period (a fortnight or a week, since 14th round is 1958-59, the reference period is one week). A person is defined as unemployed if he has no gainful employment throughout the reference week and is either seeking work, or available for work, at current rates of remuneration and in the prevailing conditions of work for at least one of the days of the reference period. Further a gainfully occupied person is defined as severely underemployed if he works for 28 hours or less and moderately unemployed if he works for more than 28 hours but less than 42 hours during the reference week. In the urban surveys (since 16th round in 1960-61), however, a person is defined as unemployed if he does not work on even a single day during the reference week and is looking for a full-time work.

Income Criterion : The income criterion is mainly associated with Dandekar and Rath.(3). They have argued that "an adequate level of employment must be defined in terms of its capacity to provide minimnm living to the population." In the Dandekar-Rath approach for measuring unemployment the time criterion has altogether been abandoned. In fact the distinction between poverty (considered as consumption below a certain minimum) and unemployment (considered as an involuntary failure to get income-yielding work for the normal number of working days in a year) is not considered.

Willingness Criterion : This criterion is based on the fact that a person may not be willing to work for more time, regardless of the duration of work currently available and the income earned. In the studies conducted under the CSRE projects, it was ascertained from the already employed rural workers whether they were willing for more work or not. Their willingness for more work is mostly affected by the wage rate and the sight of employment.

Productivity Criterion : Mrs. Joan Robinson has defined disguised unemployment as a situation in which the marginal productivity of labour is zero, so that some labour can be removed from its present occupation without loss of output. In the Indian context this approach has been used to measure unemployment by estimating the difference between the labour force required to produce the given

3. The NSS approach has also not been discussed separately because this has been dealt with here and there in the present paper.

volume of output and the labour force actually engaged to produce that output. ·

Raj Krishna has abandoned the productivity approach to measuring unemployment on the plea that the available evidence does not corroborate the existence of zero marginal productivity. We, however, abandon the discussion on the marginal productivity criterion on the assumption that it is difficult to measure marginal productivity and more so that of agricultural labourers with no economic base and in their case income approach almost corresponds to productivity approach for measuring unemployment. Thus we are left with three criteria, viz. the time criterion, the income criterion, and the willingness criterion for measuring rural unemployment. In the subsequent analysis we will primarily be preoccupied with the theoretical and practical feasibility of these criterion.

Dr. Amartya Sen(1) too discarding the views of the Experts Committee that the one dimensional magnitude of unemployment is neither meaningful nor useful has forwarded three alternative aspects of unemployment, viz. (i) the income aspect, (ii) the production aspect. and (iii) the recognition aspect. Employment adds to income, contributes to production, and leads to recognition by the person and others that he is doing something satisfactory. While these aspects frequently go in the same direction, they do not always coincide, and an important reason for differences between various estimates of unemployment lies in this coincidence.

Commenting upon Raj Krishna's 'time criterion' for measuring unemployment Amartya Sen argues that before we start checking the amount of time for which a person is employed during the year, we have to have some theory of what to count in as employment. For example, why should we count the time a peasant woman spends in helping her husband in the field but leave out the time spent in cooking? In terms of the passage of time, or in terms of the effort involved, it is not clear that the latter has a lower claim for being included in comparison with the former. If there is a distinction, it arises from the fact that the former is taking to be 'gainful' in the sense of contributing to income, whereas the value of the housewife's domestic work is left out of the national income accounts. But given the estimation procedures, some distinction between different kinds of work follows automatically. It is on this classification into 'gainful' and other work that the 'time criterion' is based, so that it essentially focuses on the 'income aspect' of employment.

Commenting upon the criterion using low income as a measure of unemployment as' done by Dandekar and Rath[4], Amartya Sen argues that although this identification of unemployment with poverty has the advantage of drawing attention to the close relation between the two, it can be somewhat misleading if a person happens to be poor despite working very hard if he is exploited. The solution here presumably will lie in the elimination of exploitation rather than offering more employment. When it comes to policy recommendations although Dandekar and Rath do take note of such possibilities, yet for the same reason it is probably best to classify these people as simply poor rather than unemployed. It will, of course, frequently be the case that unemployment in the sense of not having any gainful work for much of the time will turn out to be the most important reason for poverty, but this will be an empirical observation about unemployment rather than a definition of it. In this context, reference may be made of a study (7) presenting the character of poverty among rural labour households. The study is based on a sample study of "Employment and Unemployment of Rural Labour" conducted in West Godavari District for the period 1971-72. Two poverty levels have been chosen, viz. (i) per capita income of Rs. 400/- and (ii) per capita income of Rs. 300/-. Eight variables, viz. possession of land, average wage rate, worker-dependent ratio, size of the family, presence or absence of female workers, average level of employment, regional variations and caste are chosen and poverty levels are related to suitably classified levels of each one of these variables. Two-by-two contingency tables are constructed and by means of chi-square test the association between poverty and other variables is judged. The results of the chi-square test did not show association between poverty and employment or wage rate except in one case. Therefore, a further disaggregated study of households categorised into four groups based on employment levels and poverty levels was made. Sixty-two per cent of the households were found to be poor and unemployed and those who escape poverty even at low levels of employment among landless labour are found to belong to a certain phase of the life cycle of the farmers. Mr. Bhatty too citing the various studies by N. S. S, and Pravin Visaria remarks that "there is at best, a very tenuous relationship between poverty and the level of rural employment measured conventionally in terms of labour time disposition." Thus before establishing any firm associations between these two variables as suggested by Dandekar and Rath, some more comprehensive studies need to be undertaken so that needed empirical evidence is collected.

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[4] Dandekar and Rath's approach to poverty in India too has not been discussed separately.

On the 'income aspect' of employment, Dr. Amartya Sen argues that it relates to the income being conditional to the work in question, and not primarily to whether the income level is high or low. He does not carry this approach very far as he argues that in the Indian context, there are instances where although contribution to income might be negligible or nil, the workers do contribute to the work load of employment. A factory worker or a household servant migrates to his native village during harvesting just to share its burden in order to claim some share in the total output. Although on income account he might not be contributing anything.

So we are left with production aspect and recognition aspect of employment. Taking production aspect first, it is almost closely related to the disguised unemployment, since this concept of unemployment, as elsewhere argued, holds true only in case of self-employed persons. This approach does not seem to be of much use for measuring unemployment or employment of agricultural labourers.

Recognition aspect, however, seems to have some relevance from the point of view of agricultural workers. One variant of Dr. Sen's recognition aspect is provided by the number of applicants registered with the employment exchanges. For the agricultural labourer, however, the recognition aspect implies whether the worker is seeking or available for work. He has cited the 25th Round of the N. S. S. where it was asked from the agricultural labourers and the bottom 10 per cent of the cultivators whether there was at least one member willing to take up full-time work (i) inside the village only, (ii) outside the village only with guaranteed employment, and (iii) outside the village even without guaranteed employment and on the basis of this approach he has given the various estimates of rural unemployment. Although appears to be sceptical about this approach on the ground that (i) many households will have more than one person who is ready to take up outside employment, and (ii) why cover only the bottom 10 per cent of the cultivating households, yet this approach can be more fruitfully applied if the data are collected for each and every member of the household. But when data are collected for each of the member of the household on whether he is ready to work in three different situations cited above, this approach comes closer to Raj Krishna's 'willingness criterion' of measuring unemployment.

Thus we find that no single approach will be of much use for measuring rural unemployment in India. In this context Krishna's three (leaving aside the productivity criterion) criteria of measuring rural unemployment appear to be of much validity, although they might require some modifications. While estimating rural unemployment through 'time criterion', efforts should be made to have a disaggregated picture of unemployment into different seasons. As pointed out earlier, a year can be conveniently broken down in 5-6 seasons and the investigator can collect the requisite data at the end of each season from the selected households. The selection of the households should, as far as possible, be kept static for the whole of the year and should not be changed from season to season as has been done by the N.S.S.

While applying the income criterion of measuring rural employment, norms can be worked out on the assumption what the worker would have earned had he been fully employed for 300 days.[5] The divergence thus arrived at between the actual earnings corresponding to 'effective employment' of I. Z. Bhatty and the 'normal earnings' can be used for working out the estimates of unemployment. However, one thing need to be clarified here that associating poverty with unemployment is not of much relevance.

For the willingness criterion it is pointed out that it should clearly distinguish between demand for genuine employment and demand for over-time work and must relate the demand for employment with different wage rates.

With regard to the selection of the households to be included within the perview of agricultural labourers, in the preceeding discussion we have analysed only two approaches for the selection of such households, viz. occupation or employment approach (First Agricultural Labour Enquiry) and the income approach (Second Agricultural Labour Enquiry). Recently another approach used for this purpose is to select those households whose one member at least is ready to work for wage-paid employment for a continuous period of three months (CSRE). But this criterion appears to be hypothetical as it does not relate the availability of a worker for wage-paid employment with any wage rate nor does it show the place of availability of employment opportunities. In view of this our considered view is that any household whose one member at least reports for wage-paid employment during the preceeding year must be included in the selection of such households. It must be borne in mind that unlike the Western countries a clear demarcation between agricultural and non-agricultural labourers could not be made in India (5) and any approach which is devoid of any practical utility and is irrelevant should be dropped in developing economies such as ours.*

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[5] Taking into conideration the number of Sundays and holidays in a year, employment for 300 days is usually dubbed as full employment.

References

1. Amartya Sen : Dimensions of Unemployment in India, Mainstream, Vol. 12 (20), January 12, 1974.
2. Bhatty, I. Z. : Unemployment—Questions of Measurement and Migration, Yojana, Vol. XVII (1), January 26, 1973.
3. Dandekar, V. M. and Nilakantha Rath : Poverty in India, Economic and Political Weekly, Vol. 6 (1-2) January 2 and January 9, 1971.
4. Gupta J. R. : An Inter-regional Study into the Seasonality of Agricultural Wage Rates with particular Emphasis on its Ralationship with the Levels of Employment. Paper read at the 1974 Conference of the Indian Society of Agricultural Economics.
5. Gupta, J. R. and S. S. Johl : Crash Scheme for Rural Employment in Punjab, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana, 1972.
6. Myrdal, Gunnar : The Challenge of World Poverty, The Penguin Press, London, 1970.
7. Parthasarathy, G. S. Venkateswara Rao and G. Dasaradha Rama Rao : Character of Poverty Among Rural Labour—A Study of West Godawari District, Economic and Political Weekly, Vol. 9, (13), March 30, 1974.
8. Raj Krishna : Unemployment in India, Economic and Political Weekly, Vol. 8 (9), March 3, 1973.
9. Rao. V.K.R.V. (Ed) : Agricultural Labour in India, Asia Publishing House, 1962.
10. ——— : Employment and Unemployment, Allied Publishers Privats Limited, 1968.
11. Report of the Committee of Experts on Unemployment Estimates, Planning Commission, GOI, 1970.
12. Sethuraman, S. V. : Measuring Rural Unemployment to Provide Guidelines to Policy Makers, Economic and Political Weekly, Vol. 6 (24), June, 1971.

Poverty and Plan : A Parametric View

B. Kumar*

The Fifth Plan Draft was a new leaf in the planning history of our country. It marked the beginning of the second phase of the planned growth of India. The First Plan's 'basic projection' aimed at the doubling of national and per capita income in 21 and 27 years respectively through a series of Five Year Plans. The Second Plan lowered the time limit for achieving these objectives to 1971-72 and 1974-75 respectively. The year 1973-74 marked the end of the Fourth Plan period. In usual course the Fifth Plan would have been completed by 1975-76 but for the time lag of three, 1966-69, years which were filled in by three Annual Plans. The Draft Fifth Plan's projection covers the period 1975-86. However the Draft could not be given a final shape and the years 1974-75 and 1975-76 again witnessed the return of Annual Plans which are but truncated parts of the Draft Fifth Plan.

Plan Projections

The Plan projections and progress of national and per capita incomes of the different plans are set out in Table 1.

At 1950-51 prices the real increase in national income is not more than 70% of the original target while the rise in per capita income could not be placed beyond 30%. The flattening curve of per capita income can be attributed to 2.5% growth rate of population against the original projection of 1.4%. The economy achieved growth rate of 3.5% during First Plan, 4.1% during Second Plan, 3.5% during Third Plan, 4.5% during Annual Plans and 3.7% during Fourth Plan, compared to 5.7% as envisaged in the Plan.

With the passage of plans the planning technique and practice have considerably improved. The first three plans laid down the objectives of plans in categorical terms which included self-sufficiency, heavy industrialisation, reduction in inequalities, expansion of employment opportunities and raising of standard of living of the people. The Fourth Plan embodied an 'approach' while the draft Fifth Plan incorporates, for the first time, a 'Policy Frame.'

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Table I (Projection & Progress)

Year	First Plan (N. I.) 1960-61 prices	Second Plan 1952-53 prices		Fourth Plan 1966-67 prices		Actual 1960-61 prices	
		N.I.	per cap.	N.I.	per cap.	N.I.	per cap.
1951 (March)	9,000	—	—	—	—	9,000	255
1955	9,900	10,800	384	—	—	10,800	281
1961	11,200	13,484	408		330	14,007	306
1965	12,800	17,260	434	17,000	385	16,109	335
1971	17,000	21,610	465	18,000	486	20,196	349
1975	21,800	27,270	500	23,000	530	20,269	333
1976 (estimate)	25,800	—	—	34,000*	—	—	—

Actuals relate to finanacial year.

*1980-81.

Source : Various Plan documents.

Identification of Poverty

"Removal of poverty and attainment of economic self-reliance are the two major objectives of the Fifth Plan." The Fifth Plan strategy to realise these objectives consists of a 5.5% growth rate, a national programme for minimum needs, emphasis on agriculture, basic and key industries, and adequate public procurement and distribution policy, export promotion, an equitable prices-wages-income balance, and institutional, fiscal and other measures for the reduction of social economic and regional inequalities.

The document emphasises, that "a large number has remained poor" in spite of two decades of economic development. The dismal poverty of the general masses has been a focal point of discussion in the country since 1969. The negligible impact of the earlier plans in alleviating the poverty of the common masses has aroused a discussion in academic and political circles pertaining to the nature and extent of poverty in the country.

For the first time an estimate of people living below poverty line has been included in the draft plan document. Assuming Rs. 20 per month per capita income as the poverty line (at 1960-61 prices) as determined by a Working Group of the Planning Commission in 1962, the Draft estimates that at 1973 prices (Rs. 40 as poverty level)

173 million people constituting 30% of the total population were living below poverty line in the country. (Table II).

Table II (Poverty Data of Draft)

	1973-74	1978-79	1983-84	1985-85
1. Total private consumption (Rs.cr.)	38,334	49091	63,815	71,153
2. Share of bottom 30% (Rs. cr.)	5,160	6698	8,589	9,577
3. Mid-year population (million)	577	633	682	702
4. 30% of total population („)	173	190	205	211
5. Per capita consumption of 30% population per month (Rs.)	25	29	35	38
6. Required per capita consumption of 30% (monthly)	40.6	40.6	40.6	40.6
7. Required total consumption of 30% for poverty removal (Rs.cr.)	8,426	9,253	9,984	10,276
8. Required share of 30% in total consumption (in per cent)	21.9	18.75	15.64	14.44

Source: Draft Fifth Plan, pp. 7-8.

According to the Draft Fifth Plan only 13.46% of the total private consumption is available for the bottom 30% of populatio covering 173 million people. Their monthly per capita consumptio is Rs 25 which is Rs. 15.4 less than the minimum required. Thi implies raising of private consumption of 30% of bottom populatio to 21.98% of the total consumption. The Plan envisages raising o per capita monthly consumption to Rs. 29 by 1978-79, Rs. 35 by 1983-84 and Rs. 38 by 1985-86. Even at the end of the sixth Plan the bottom 30% would still be marginally below the minimum consumption level.

However the Planning Commission's estimate of poverty in th country could be compared with the other estimates made by different persons from time to time as presented in Table III.

Table III (Estimates of Poverty)

Dandekar and Rat	(1967-6	Urban	77	millio
Reserve Bank	(1967-68	All	289	millio
E.P.W. De Costa	(1963-64	„	328	„
B. S. Minhas	(1967-6	„	247	„
„	(1973-74	„	366	„
Fifth Plan Approach Paper	(1973-74	„	220	„
Draft Fifth Plan	(1973-74	„	173	„
Author's estimate*	(1971-72)	„	325	„

*The author in his forthcoming book, 'Aspects of Poverty and Planning', h subdivided poverty line into 'subsistence line', 328 million, and 'breadline' 11

The difference in the estimates of different people is due to difference in approach, definition and norms which is quite natural in the studies of this nature. However it is evident that the estimates of the Planning Commission is under-estimated. Moreover the poverty line at Rs. 20 (1960-61 prices) is exclusive of medical and education needs for which the Working Group had worked out a minimum income of Rs. 35 at 1960-61 prices or Rs. 70 at 1973 prices.

International Perspective

Poverty is a world wide phenomenon. The UNO in its survey of 70 countries in 1949 estimated that 67% of the world population were subsisting on 15% of the world income. The affluent and the poorer sections were separated by a disparity in per capita income of 915 US dollars and 54 US dollar respectively. With the passage of time the gulf has still widened. For example the per capita income in U. S. A. was 4850 US dollars as a compared to 99 US dollars of India in 1970.

However poverty is a relative term which cannot be defined without referring to a particular stage of time, space and growth. An Expert Committee in USA has determined an income level of 300 US $ and 100 US $ as the level of 'poor' and 'very poor'. If these norme are applied more than 70% of the nations of the world would be placed in the bottom category of poverty. The World Bank Development Research Centre has classified inequality as High, Moderate and Low. Income distribution in some selected countries on this basis is given in Table IV.

Table IV (Income Distribution in Selected Countries)

		Share of NDP Percent of population		
	Per capita income US $ (1)	Lowest 40% (2)	Middle 40% (3)	Top 20% (4)
Brazil (1970)	390	10	28.4	61.5
Mexico (1969)	645	10.5	25.5	64.0
Iraq (1966)	200	6.8	25.2	68.0
Malaysia (1970)	330	11.6	32.4	56.0
France (1962)	1913	9.5	36.8	53.7
Burma (1958)	82	16.5	38.7	44.0
India (1964)	99	16.0	32.0	52.0
Iran (1969)	332	12.5	33.0	54.5
W. Germany (1964)	2144	15.4	31.7	52.9

	(1)	(2)	(3)	(4)
Japan (1963)	960	20.7	39.3	40.0
U. K. (1968)	2015	18.8	42.2	39.0
Hungary (1964)	1140	24	42.5	33.5
Canada (1968)	2920	20	41.2	38.8
U.S.A. (1970)	4850	19.7	41.5	38.8

Source : Finance & Development, Sept. 1974

Quantitative Gap

In view of wide disparity in norms, concept and stages of economic growth in the various countries it is futile to adopt any international standard or consumption basket, as is prepared by the Financial Express of London, for determining poverty level in our country.

In Table V an attempt has been made to quantify poverty on the basis of certain basic physical needs of the masses which can serve as the cornerstone for the re-formulation of the strategy for poverty removal during the Fifth Plan period.

Table V (Existing and Minimum Needs)

Items	Minimum needs	Existing level
1. Food (per capita, per month)	Rs. 48	Rs. 17.35 (of 60%* population)
2. Cloth (meter)	Rs. 25	Rs. 23.16 rural** Rs. 24.72 urban
3. Fuel, lighting, etc. (20% of food)	Rs. 9.50	Rs. 5.44 rural*** Rs. 11.47 urban
4. Housing (per capita space)	50. sq. feet	Average persons living in small rooms : rural 2.58 urban 2.61
5. Education (constitutional mandate)	free education for children up to 14 yrs. of age in 10 years.	In 1974 : 84% of 6-11 and 40% of 11-14 age group getting free education.
6. Public health centre (Fifth Plan approach)	One centre for every 4-5 thousand population	one sub-centre for every 10000 people.
7. Drinking water for villages	Total villages 5,77,000	4,17,000 villages 1,54,786 (1974 M.)
8. Rural electricity	5,57,000 villages	villages electrified.

* If entire income is spent on diet.

** According to NSS in 1964-65

*** India, 1971-72

Source : A detailed working is given in author's forthcoming book, Aspects of of Planning and Poverty, (Sterling Publishers, New Delhi).

Vehicles of Poverty Removal

'Underdevelopment and inequality' have been named in the Draft as the main causes of poverty. "Inadequate rate of growth" has been attributed as mainly responsible for the failure of planning to make a dent on poverty.

The profile of poverty as depicted by the various estimates or the facts given in the Draft Fifth Plan is incompatible with any democratic socialist structure. Absence of clearly defined vehicles of poverty removal has been the main reason for failure of the earlier plans to generate any marked impact on the poverty level in the country. The Fifth Plan Draft contains a number of measures for achieving the professed goal. The following suggestions may be put forth for modification of or incorporation in the Fifth Plan for poverty eradication. 1. Nationals programme of minimum needs identify the priority areas of social consumption and to law down for each these minimum norms for attainment by the end of the Fifth Plan period. The programmes include elementary education for children up to the age group of 14 years, rural health, nutrition, drinking water, provision of house sites, slum improvement, rural roads to villages covering a population of 1500 and rural electrification to cover 30-40% of the rural population. An outlay of Rs. 2803 crores has been provided for these programmes against Rs. 1059 crores of the Fourth Plan. Besides Rs. 249.52 crores and Rs. 400 crores have also been provided for elementary education and rural electrification respectively. This financial allotment is too meagre to produce any effect on minimum neede of the masses.

2. Increase in employment opportunities is an important vehicle of poverty removal. The Draft Plan embodies a labour force projection which reveals that the labour force would increase from 183 million in 1974 to 207 million in 1979, 235 million in 1984 and 247.9 million by 1986. The estimated addition is about 65 million. However the Plan does not contain any precise estimate of the backlog of unemployed or the number of jobs to be created. According to the Expert Committee on Unemployment (1973) in 1971 there were 18.7 million unemployed and 26.9 million underemployed people in the country. This is an important omission in the Draft Plan.

3. A precise price-wage-income policy could have been the most important vehicle of assuring reduction in the inequalities. But in this respect the Plan simply refers to "an equitable prices-wages-incomes balance. It emphasises that the required savings must come

from more affluent sections of our society. "For income distribution the Plan stresses that the principal instrument of economic policy that can be deployed for this purpose is the creation of additional opportunities." A well-defined wage-income policy indicating the upper ceiling and the lower floor of income would have been most effective policy frame for reducing poverty in the country.

4. The Plan relies on "institutional, fiscal and other measures for the reduction of social, economic and regional inequlities." It refers to the "domain of monetary and fiscal policy". However the excessivs reliance on fiscal and monetary measures, like the earlier plans, is again explicit in the document. To expect fiscal and monetary measures to help the "progress of development to be carried out in non-inflationary manner" is an exercise in futility. Monetary and fiscal policy is least effective in a mixed but planned economy wedded to socialist values. The country needs, moreover, a new look in monetary policy in which the expansion of money is linked to the production and growth rate of the country. These policies should derive sustenance from an income-wage policy.

PERCENTAGE CHANGES IN GDP IN LATIN AMERICAN ECONOMIES

	1970	1973		1970	1973
Argentina	4.4	5.5	Haiti	0.6	—
Barbados	9.4	1.7	Honduras	3.7	5.8
Bolivia	5.2	6.9	Jamaica	7.5	6.6
Brazil	9.5	11.4	Mexico	6.9	7.6
Chilie	3.7	−4,0	Nicaragua	2.7	2.2
Columbia	6.7	7.2	Panam	7.0	6.5
Costa Rica	10.3	5.5	Paraguay	6.1	7.2
Dominican Republic	10.6	11.2	Peru	8.0	6.3
Ecuador	7.9	13.0	Uruguay	4.7	1.0
El Salvador	3.0	5.1	Venezuela	7.6	5.9
Guatemala	5.7	7.6			

Rate of Growth and Time Horizon in Planning

(A STUDY WITH REFERENCE TO INDIA)

P. K. Chatterjee*

There are three features of economic development which we may consider as fundamental : (i) elimination of poverty ; this means that the level of living of all persons should rise above the line of poverty ; (ii) absolute economic position of no group or community should be allowed to deteriorate ; and (iii) economic position of at least some group or groups should record improvement.[1]

Taken together, features (i) and (iii) mentioned above imply that in the development process, the centre of attention should be the poorest section of the community. In a country where some people live below the line of absolute poverty, the first task is to ensure that incomes of these people are raised to at least the barest minimum. The task is not only important but also extremely urgent. The task has to be completed within a very short period, say, at most five years. In this context the time horizon has to be necessarily short.

How fast must the economy grow so that the above aim may be realised ?

Let P=total population in the country concerned ;

k=proportion of the population who are absolutely poor ;

y_b=per capita income of the absolutely poor section of the population ;

y_b^*=minimum per capita income necessary to raise above the line of absolute poverty ;

y_a=per capita income of the remaining portion of the population.

The basic task here is to increase the per capita income of the poor from y_b to y_b^* within 5 years without reducing the per capita income of the remaining portion of the population (vide feature (ii) stated above).

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$$y=\frac{kPy_b+(1-k)Py_a}{P}=ky_b+(1-k)y_a\ldots\ldots(1)$$

Target for the end-period per capita income is :

$$y_T=\frac{kPy_b^*+(1-k)Py_a}{P}=ky_b^*+(1-k)y_a\ldots\ldots(2)$$

Then, the (minimum) required rate of growth of per-capita income (r) is given by the following formula :

$$y(1+r)^5=y_T$$

And the required aggregate rate of growth comes to the rate of growth of per capita income plus the rate of growth of population. In other words R (the minimum required rate of growth) $=r+p$, where p is the rate of growth of population.

While theoretically it may be possible to eliminate poverty with a rate of growth $=R$, in practice, a higher rate of growth may be necessary for the purpose in view of the fact that zero increase in the per capita income of the remaining section of the population may not be feasible in the face of rapid rise in the per capita income of the poor mainly for the following reasons :

(1) Elimination of poverty may require flow of certain goods and services, e.g., cheap and sufficient quantities of food grains, low-cost, housing, public health services, etc. Production of these goods and services requires services of entrepreneurs, traders, engineers, doctors and other skilled people. Further, employment opportunities must be created for the poor people. Increased production of commodities meant for the poor and increase in the purchasing power of the poor through gainful employment may very well increase the incomes of those who are not so poor. In other words, relation between resources may be such as to require simultaneous growth in incomes of other sections along with the rise in incomes of the poor.

(2) Increase in the per capita income of the poor, and, for that matter, increase in the per capita income of the community as a whole, will require additional investment and, therefore, additional saving. How will this additional saving be generated ? The poorest section of the population, with income below subsistence, is definitely unable to contribute anything to the additional saving required. Additional saving may be squeezed out of the not so poor section through fiscal and other means. Extraction of additional saving out of the not so poor people without any increase in their per capita

income will mean that their disposable income will fall ; forced saving may curtail their consumption and economic welfare. This is not permissible (vide condition (ii) stated in the first paragraph). The entire additional saving may, however, be procured from foreign sources. Dependence on foreign aid to this extent is clearly not advisable. Thus some increase in the incomes of the more affluent people will have to be permitted so that additional saving required for generating additional incomes of the poor may be secured from them.

(3) Institutional framework in an underdeveloped country is usually biased in favour of the more affluent section ; under the circumstances it may not be feasible to prevent completely the more affluent section from reaping any fruit of development even for a limited period.

In other words, it may be necessary to allow the rich to become slightly more rich so that the poor may not remain poor. Therefore, in order to make the programme feasible, some increase in the per capita income of the other section of the population has to be allowed in the calculation.

For elimination of poverty, however, it is not enough that the economy attains a rate of growth equal to or higher than 'R'. Sectoral and regional plans will have to be appropriately framed, and the increase in output must flow to the poor in suitable forms.

In India, it has been estimated that at 1960-61 prices, private consumption of Rs. 240 per capita per year is needed to assure a bare minimum level.[2] We start our analysis of the problem of poverty and its implication for planning with the following table quoted from B.S. Minhas.[3]

Table 1

Average Per Capita Consumption by Fractile Groups at 1960-61 Prices (Rs.) : Rural India

Fractile Group	1967-68
Poorest 5%	81(1.48)
5-10	110(2.02)
10-20	137(5.01)
20-30	166(6.08)
30-40	194(7.09)

Table 1 Contd.

40-50	222(8.13)
50-60	254(9.29)
60-70	292(10.68)
70-80	340(12.46)
80-90	414(15.15)
90-95	512(9.37)
Richest 5%	723(13.24)
Total population (million)	514
Per capita consumption at 1960-61 prices (Rs.) Total	292
Rural	273

Note : Figures in the bracket indicate p.c. shares.

We calculate per capita income by fractile groups for the country as a whole from the data in Table 1 in the following manner. We make two simplifying assumptions : (1) We assume that per capita consumption=per capita income for the poor people. The implication is that the poor people consume the whole of their meagre incomes. (2) Further, we note that the ratio between all-India per capita consumption is 1.07 ; we take that this ratio applies symmetrically to each of the fractile groups in very low income brackets.

Table 2

Per Capita Income by Fractile Groups

At 1960-61 Prices (Rs.) : All-India

Fractile Group	1967-68
Poorest 5%	86.67
5-10	117.70
10-20	146.59
20-30	177.62
30-40	207.58
40-50	237.54

Thus we find that roughly 50 p.c. of the country's population have incomes below Rs. 240/- per head per annum, i.e. incomes below poverty line. The per capita annual income for the bottom 50 p.c. who live below poverty line works out to be Rs. 174.30 approximately.

Another estimate of the pattern of income distribution has been given by Ojha and Bhatt.[4]

Table 3

Pattern of Income Distribution in India 1953-54 to 1956-57

Percentage

Households	Rural Sector	Urban Sector	All India
Top 5 p.c.	17	26	20
Top tenth	25	37	28
Second „	14	12	14
Third „	13	10	13
Fourth „	9	8	9
Fifth „	9	8	8
Sixth „	8	6	8
Seventh „	7	6	6
Eighth „	6	6	6
Ninth „	5	4	5
Bottom „	4	3	3
Concentration ratio	0.310	0.400	0.340

Source: Ojha and Bhatt, A.E.R., Sept 1964, p 714.

According to this estimate, the bottom 50 p.c. of the households get 28 p.c. of the personal income; per capita income for the bottom 50 p.c. calculated on this basis is slightly lower than the estimate (Rs. 170 approximately) based on the data in Table 2.

Per capita income in real terms is now practically at the same level as that in 1967-68. Thus, the immediate objective of economic planning in India is reduced to the following: To increase the per capita real income of the bottom 50 p.c. of the population from Rs. 174.30 or Rs 175 to Rs. 240/- in 5 years without reducing the per capita income of the remaining 50 p.c. In other words, the per capita income should increase at the rate of about 6.6 p.c. per annum for the bottom 50 p.c. For the remaining 50 p.c., the stipulation is that the per capita income must at least be maintained.

But, as we have already noted, it is not feasible to increase the per capita income of the poorest section of the population without allowing for income increase in the per capita income of the people in the upper strata. Let us suppose that a minimum increase of 2 p.c. per annum in the per capita income of the upper section will have to be allowed for. Under the circumstances, the required rate of growth of per capita income will be around 3.26 p.c. per annum in real terms. Assuming the rate of population growth to be 2.2 p.c. per annum, the over-all rate of growth comes to 5.46 or 5.5 p.c. per annum.

The target of an annual rate of growth of 5.5 p.c. per annum set in the Fifth Five Year Plan is thus not inadequate. What is frustrating is virtually no growth in real per capita income since 1967-68.

II

While the immediate task of economic planning is to guarantee a minimum income to everybody, economic development must in the long run ensure a richer and a more varied existence to the people of the country, Further, the character of the growth path depends on the choice between more consumption now and more consumption in the future. While some are going without (certainly not the people who do not have even the bare minimum) bare minimum it is absolutely necessary to ensure continued growth. The present generation naturally wants to be assured of its participation in the fruits of development in a democratic country. People who make sacrifice now must be able to reap its benefits at least to some extent within their life time. Determination of long-term planning horizon must bear this stipulation in mind. In this context, the tasks of planning are two-fold : (1) to fix up the target (of per capita income) for the end period ; and (2) to determine the planning horizon.

In setting the target for the level of per capita income, the planners may consider some of the following objectives mentioned in an ascending order of modesty : (1) To raise the per capita income of the country to the level of per capita income now being enjoyed by the poorest of the advanced countries ; (2) To attain the level of per capita income now being enjoyed on average by the intermediate group of countries ; (3) To attain the level of per capita income now being enjoyed by the most affluent of the less developed countries ; (4) To reach the level of per capita income now being enjoyed on average by the less developed countries ; and (5) To determine the minimum level of per capita income now required by the country to ensure, given a fair distribution, a bare minimum to every section of the population and to set as target that level which this minimum level of per capita income would reach growing at a reasonable rate, say, 3 p c. per annum, in course of a finite period.

What should be the length of this finite period which we call the time horizon ? In this context, life expectancy is an important consideration.[5] If a countryman expects to live on average for, say, 50 years in all and if at the moment the average age of the country's population is, say, 25 years, the fruits of development (in terms of realization of the target) must be reaped within $50-25=25$ years. In other words, if e=life expectancy and if x=average age of the population, time horizon $(T)=e-x=t$ years.

The required rate of growth of per capita income is given by the formula :

$y(1+r)^t=y_T$ where y=initial level of per capita income, y_T=per capita income at the end of the time horizon, t=length of the time horizon, and r=required rate of growth.

Can those who have born in independent India expect that half a century of planned economic development will raise their per capita income to a level which is now being enjoyed by the least developed of the developed countries in North America or Western Europe ? The answer is a clear 'No'. Even the average per capita income of the countries in Latin America (407 in 1966) will be too high a target.

We will examine the implications of two very modest targets. But before that we will consider the question of time horizon in the Indian context.

Life expectancy in India is a little over 46 years. Further, about 50.7 p.c. of the country's population are under 19 years of age. And we take the median age of the population to be roughly 19 (or a little less than that). Thus the length of the time horizon comes to a little over $(46-19)=27$ years or roughly 28 years.

The average per capita income of the less developed countries in 1966 was roughly Rs. 1380/- ($184). Let us set Rs. 1380/- as our target of per capita income at the terminal year of the planning period. In 28 years, the per capita income of the country should grow at the rate of about 5.2 p.c. per annum. If the country's population continues to grow at the present rate, i.e., 2.2. p. c. per annum, the over-all rate of growth will have to be nearly 7.5 p.c. per annum. While this rate of growth is not inconceivable, it will be feasible only if we are able to achieve a genuine breakthrough in agriculture.

Assuming the present per capita income at 1960-61 prices to be Rs. 330/-, the present per capita income for the poorest 50 p.c. to be Rs. 175/- and the minimum income level to be Rs. 240/-, we find that the minimum level of per capita income that would have assured bare minimum to everybody without affecting anybody's (existing) higher level of income would come to Rs. 362.50. This minimum level of per capita income would reach the height of Rs. 827 at the end of 28 years (i.e. the time horizon) growing at the rate of 3 p.c. per annum. The most modest target that may be set is to take the country's per capita income to this level in 28 years. This would require a rate of growth of per capita income of the order of 3.3 p.c. per annum, or an aggregate rate of growth of 5.5 p.c. per annum, assuming a 2.2 p.c. rate of growth of population. The target is thus very modest both in terms of desirability and feasibility. What is required is a complete break with the past in respect of attitude, emphasis and implementation.

Notes

1. T. W. Schultz—The Economic Organisation of Agriculture, pp.·3-9.
2. The estimate has been made by a Study Group comprising of Prof. D. R. Gadgil, Dr. B. N. Canguli, Dr. P. S. Lokanathan, Shri M. R. Masani, Shri Asoka Mehta, Shri Sriman Narayan, Shri Pitamber Pant, Dr. V.K.R.V. Rao, Shri Anna Saheb Sahasrabuddha.
3. B. S. Minhas—'Rural Poverty, Land Re-Distribution and Development Strategy.' Indian Economic Review, April 1970, Table 2, p. 101.
4. P. D. Ojha and V. V. Bhatt—'Pattern of Income Distribution. In an Underdeveloped Economy—A Case Study of India. The American Economic Review, Vol. L IV, No. 5, Sept. 1964.
5. S. Chakravorty and R. S. Eckaus—'Choice Elements in Intertemporal Planning, Rosentein—Rodan (Ed.)—Capital Formation and Economic Development, p 70.

On Market Mechanism for Food Grains Distribution

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Free market mechanism equates demand and supply through the dynamics of price. The change in the price level is, therefore, an indicator to the maladjustment between demand and supply. This maladjustment is, however, a complex phenomenon and bears an interrelationship of many variable factors like population, production, foreigh trade, volume of money supply, distribution of income, speculative activities, income elasticity and cross elasticity (among principal food grains substitutes) of demand, etc. In a low-income economy like ours, these factors are more sensitive, the former ones being the cause of the latter factors. Because of these complexities, our economy exhibits a much greater gulf in the price movement than is justified by the gap between the changes in consumption and production. Food being the most important single item in our economy, its prices are the most important variable that acts like a pace-setter for the general level of prices and hence for overall economic stability. The sharpest increase in prices since 1972-73 has been recorded in food grains, the rise being about an average of 30% during the twelve-month period in the face of corresponding average yearly rise of 10% in production as against 2.5% of population growth. This peculiarity of relation which the food grains production and their prices obtain has led to the controversy among economists as to the necessity or otherwise of the public distribution of food grains in our country. Some suggest that the system of controls has given rise to an unnecessary psychological fear of acute shortages in food grains, while others will argue that the easy course of food imports has made possible for most of the States being dubbed as 'deficit States'. This paper, therefore, seeks to examine whether the free market mechanism can obtain a rational equilibrium between the availability and consumption of our food grains.

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The system of controls in India was first introduced in the food economy to put down the ugly consequences of World War II and the Bengal Famine of 1943. Famines and food shortages are nothing new to our country. In fact, they used to raise their more ugly heads even before India stepped into the twentieth century. Yet at no times during the worst years did grains disappear from the market.

It does not, however, mean that the market mechanism could ever equalise the share of difficulties created by the scarcity-hit commodity. Moreover, in the pace of more than a quarter of a century in the post-independence era, the over-all picture of India's socio-economic life has undergone a radical change. The wheels of our economy have entered from underdeveloped track into a developing level, the process of industrialisation has experienced a rapid rise in urbanisation and, along with the increase in per capita income, the requirement of food grains has gone up on account of high income elasticity of demand. The private wholesale traders, on the other hand, have taken full advantage of the situation. Their speculative hoardings and black marketing activities have all the more added fuel to the fire of shortages giving rise to abnormal rise in prices beyond the reach of vulnerable section of the community.

Comparative Study of Food Grains Production

A comparative study of the periodic availability of food grains from the country's production will reveal that the per capita availability in recent seventies has not been less than that of the nineteen-fifties or even the favourable years of then undivided India. A survey of the country's food position of the period 1967-75 as in Table I below shows that the net per capita food grains production ranged between 397 grams and 471 grams per day. Let us take the example of 1972-73 which happens to be the most unfavourable year since 1967-68 with an average production fall of about 11%. Allowing 12.5% for seeds and wastage in fields, transport and storage, from the gross production of only 95 million tonnes, we are left with a net availability of 83 million tonnes which gives an average of 397 grams per capita per day. This favourably compares to the corresponding availability of 347 grams in 1951-52 and 388 grams in 1952-53.[1] We can, however, obtain a better measurement of food grains availability if we convert the total population into adult consumption units, A caution of course, is necessary here. Most writers prefer such conversion to base a family unit of adult-minor ratio of 2:3. The composition of population, specially in rural areas, however, seems to be far from this assumption. We, therefore, prefer to consider the family unit of adult-minor ratio as 3:3 for the purpose.

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[1] Planning Commission; Basic Statistics Relating to Indian Economy, 1950-51 to 1965-66 (1966).

Accordingly, if we convert the population of the year 1972-73 into adult consumption units, we get an average availability of 530 grams of food grains per adult per day from the country's own production. Except for this unfavourable year, the average per adult production for the whole period works out at 592 grams per day as against the corresponding availability of 595 grams in the decade 1936-45 of undivided India.

Table 1

Period	Adult Consumption Units (In millions)			Production of food grains (In million tonnes)		Net per capita production per day (grams)	Net per adult unit production per day (grams)
	Rural	Urban	Total	Gross	Net		
1967-68	311.1	75.2	386.3	95.6	83-6	443	590 (10)
1968-69	317.4	77.0	394.4	94.0	83.2	433	576 (8)
1969-70	323.7	79.1	402.8	99.5	87.1	443	590 (10)
1970-71	329.4	81.6	411.0	107.8	94.3	471	628 (17)
1971-72	335.7	83.9	419.6	106.0	92.8	453	693 (16)
1972-73	342.6	85.7	428.3	95.0	83.0	397	530 (−1)
1973-74	349.8	87.4	437.2	107.0	93.6	439	588 (10)
1974-75	357.2	39.4	446.6	104.0	91 0	391	500 (5)

Note (a)Figures in brackets indicate percentage over nutritional need. (b) Net production is calculated on deduction of 12.5% from gross production. (c) Consumption units are based on population figures of 1961 Census and 1971 Census.

A Paradox

From what the 'average per capita availability' analysis reveals, it is only logical to argue that in spite of the recent population explosion, the country is able to provide the population from its own production the same quantity of food grains per head as it could do in the most favourable years of the recent history. Some economists, therefore, believe that the production of food grains in our country being marginally short of requirements only in some unfavourable years, the shortfall can be more than compensated through occasional ad hoc distribution arrangement out of the stock procured in surplus years without even taking resort to imports of food grains.

Assuming, for the entire population, the requirement of an average of 535 grams of food grains for an adult consumption unit, which has been estimated to be the nutritional level of consumption for the rural population[2] (and 450 grams for urban people), we can draw the following requirement schedule.

Table 2

(In million tonnes)

Years	Annual Requirement of foodgrains			Annual net production	Production surplus	Production shortfall
	Rural	Urban	Total			
1965-66	58.35	14.04	72.39	63.0		9.4
1966-67	51.58	14.33	73.91	64.9		9.0
1967-68	60.83	14.63	75.46	83.6	8.1	
1968-69	62.11	14.94	77.05	83.2	6.1	
1969-70	63.41	15.25	78.66	87.1	8.4	
1970-71	64-74	15.57	80.31	94.3	14.0	
1971-72	66.10	15.89	81.99	92.8	10.8	
1972-73	67.49	16.22	83.71	83.0	—	0.71
1973-74	68.91	16.56	85.47	93.6	8.1	
1974-75	70.36	16.91	87.27	91.0	3.7	
Total :					59.2	19.1

The table reveals an interesting trend of aggregate requirements—production relation of food grains in the decade 1965-75. Excepting 1965-66 and 1966-67, almost all the years have shown net production much in excess of requirement. The aggregate surplus during the ten-year period amounted to 59 million tonnes as against the aggregate shortfall of only 19 million tonnes. This works out at an over-all surplus of 40 million tonnes in the period of our study. Thus the country's production alone should have not only fed the entire population, but could leave annually an average amount of four million tonnes in the surplus account after meeting the shortfall of two deficit years. In sharp contrast to this, however, the nation had to import food grains to the tune of 32.9 million tonnes to subsidise the requirement during the decade. One should, therefore, simply wonder at the paradox of our food economy and the more perplexing questions we face are : why has been in existence at all the public distribution system in our country to ensure its people the barest need ? And why in spite of abundance of grains, does our food economy continue to exhibit a chronic shortage till today ?

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[2] Government of India, Fourth Five Year Plan, page 35.

Macro Study Untenable

To answer these questions we have to review the extent of of relevance of our study which we have done with the help of aggregative analysis. Many considerations seem to have escaped our survey over the food requirements. We have not, for example, taken into account the difference in the level of consumption between rural and urban sectors and amongst different sections in the rural population itself. A rise in the per capita money income through continuous investment on development programmes since the launching of First Five-Year Plan has caused a substantial rise in the demand for food grains. High income elasticity of demand for food in a low income economy like ours is obvious. Although, in India, the elasticity differs between the rural and urban sectors, it has been estimated at 0.8 for all-India. This means that one per cent increase in income will increase the demand for food by 0.8%.[3] Using this elasticity and the projected growth of population at 2.5% per annum and per capita private consumption, the demand for farm product is estimated to rise at the rate of 4.7% per year. But the index of food grains production (base 1949-50=100) could only increase from 137.1 in 1960-61 to 176.2 in 1974-75. It works out at an increase of only 2 6% per year. This vacuum, thus formed, incites the anti-social elements in food grains market and brings about violence in the scarcity situation. Further, there are marked differences in the consumption level among the different expenditure classes due to existence of wide gap between poverty and prosperity. All these considerations remain hidden behind the concept of 'average per capita availability'.

As one of the most important objectives of economic planning in underdeveloped countries is to improve the living conditions of low income groups with a view to bringing them to the level of some kind of national minimum, it is important to know how the different sections of the population are faring in getting food grains supplies adequate in quantity and tolerable in quality.[4] Thus, one has to consider the distribution in India in this perspective and not in terms of average per capita availability which is more likely to mislead the conclusions in the context of rapidly changing food

[3] Govt. of India : Fourth Five Year Plan, page 35 ;

[4] J. W. Meller : The Economics of Agricultural Development. p, 57 (1969).

situation in the country. In fact, macro analysis of food grains distribution can perhaps be profitably employed in the micro level production-distribution units like a co-operative society or a village or at least a circle where the divergence in the consumption units is determinable without much difficulty, but it will lead more to the misleading conclusions in the macro level units like States or the country as a whole.

Consumption Levels of Food Grains

In fact, there is nothing like a food consumption level which can be prescribed to one and all. How is it possible to ensure that each individual will eat equal amount of food which is limited by the national per capita availability ? Are we then to believe that every citizen of India irrespective of rich and poor, high and low, rural and urban, male or female and literate or illiterate is so imbued with national feelings and so aware of distribution problems of food grains that he or she would weigh his or her meals before eating them ; or would it mean that the government would know, year in and year out, the quantun of food production on every farm and would be able to extract from the cultivators production in excess of requirements, at the rate of national per capita availability ?[5] Food requirement varies from person to person depending on size, sex, age, taste and habit and also the nature of work a person is engaged in. Therefore, to equate the requirement of a particular kind of food grains to its production in a shortage-dominated economy is an impossible task. The maldistribution so occuring in the ratio of production among different cereals is bound to develop pockets of scarcity at times.

The most important determinant of the level of food grains consumption is the income of an individual. The per capita income in India is about Rs. 325 per annum (in 1974-75) at 1948-49 prices. This works out at about 0·85 paise of per capita income per day. The level of income might seem adeqate for providing a standard of of food grains consumption above the subsistence level at normal prices. But this is only what the average per capita income signifies. It is, however, more on arithmetic sense than something real. The distribution of national income is so much unequal that the concentration of its large proportion on the few hands completely falsifies all the average findings of per capita food grains availability. The extent of inequality can be ascertained from the following.

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[5] S. S. Madalgi : Population and Food Supply in India, page 63 (1970)

Table 3
Extent of Inequality in Per Capita Levels in 1971-72
(at 1960-61 prices)

Top Expenditure Classes (in Rs.)	Per Capita Annual Income (In Rs.)		Disposable Income (In crores of (Rs.)		Disposable Income as % of total income		Population in expenditure class as % to total population	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
55- above	1636	2149	2011	1913	13.6	40.1	2.8	8.6
43-55	731	616	931	458	6 3	9.6	2.9	7.2
34-43	577	487	1419	449	9 5	9 4	5.4	8.9
28-34	477	400	1715	406	11.6	8.5	7.9	9.8
Total for above four classes	710	904	6076	3226	41	68	19	34

The above table presents a revealing picture of the extent of inequality amongst different sections of people on the one hand and between rural and urban sectors on the other. As much as 48% of India's total disposable income is concentrated on the hands of top four expenditure classes constituting 22% of the total population. Only 19% of the rural population enjoy 41% of rural dispossable income and 34% of urban population commands over 68% of total urban dispossable income. The average per capita annual income for the top four expenditure classes comprising a population of 122 million accounts for Rs. 767 at 1960-61 prices (in 1971-71) as against the all-India average of about Rs. 300. These data then bring out the obvious striking disparity in the consumption level of our population in different expenditure classes in both urban and rural sectors. A large portion of the population, it follows, has food consumption levels so low as to result in what is called 'undernutrition' referring to quantitative inadequacy of food grains. P.V. Sukhatme observes, "As a conservative estimate, a quarter in India's households was underfed during 1935-48 and that the proportion of those undernourished would seem to hold good even today.[6] Today, after ten years of his observation, the inequality has remained at least at the same level, if not widened further.

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[6] P. V. Sukhatme: Feeding India's Growing Millions, pages 2-3 (1965).

Food Situation Free From Distribution Control

Let us now turn our attention to the changed situation that the food economy is expected to attain, in case the public distribution system is completly withdrawn and the food grains market is allowed to have free play of demand and supply. Before we enter into this area of study, let us, for a while, look for certain determinant tools to consider some norms of consumption. Firstly, according to the diatery surveys conducted by the Indian Council of Medical Research an adult member of the urban population will have to consume enough food grains to supply 1500 calories or 450 grams per day, i.e, 65% of the total calorie requirement, the corresponding figure for rural population being 1800 calories or 535 grams, i.e. 80% of calorie requirement under the existing dietary conditions. It is interesting to note, in this connection, as the National Sample Survey discovered, that the top four expenditure classes of the urban sector have consumption level which gives them calorie supplies between 18% and 29% higher than the norm of 1500 calories. In the corresponding upper classes of rural sector, the consumption levels are so high that the excess of calorie over the nutritional level of 535 grams, range between 21% and 60%. Considering sufficiency of purchasing capacity of the top four classes, we shall, however, assume 40% and 25% of their excess consumption in the rural and urban sectors respectively. We shall also assume that the agriculturist class has the retaining capacity to the equal degree for their own consumption from the quantity of food grains they produce. Secondly, we shall see the total population through four income streams (at 1948-49 prices) viz., category I—comprising top four expenditure classes whose per capita monthly income is Rs. 45 and above; Catogory 11—consisting of agriculturists class; Catagory 111—identifying those having per capita monthly income between Rs.25 and 33, who are supposed to have the purchasing capacity for food grains consumption at a level higher than the nutritional requirement by 20% and 10% for rural and urban population respectively, and Category IV—comprising the low income groups whose per capita income is so less that they are either undernourished or underfed.

If we relate these norms of consumption with the income-inequality data, we can present a more revealing picture (Table 4) which will unveil a sad commentary on the free play of demand and supply in our food grains market. The figures 1971-72, one of the most favourable years of the recent past, have been chosen to serve as an example in this regard.

Table 4

Pattern of Distribution Under Free Market Mechanism (1971-72)

Category of Income streams with range of per capita monthly income (In Rs)	Adult consumption units (in millions)			Consumption level as per purchasing/retaining capacity per adult per day (In grams)		Category-wise distribution of total net production (In million tonnes)		
(1948-49 prices)	Rural	Urban	Total	Rural	Urban	Rural	Urban	Total
1 (180-40)	64.17	25.77	90.94	750	562	17.6	5.5	23.1
11 (Agriculturist class)	88.35	16.65	105.0	750	562	24.2	3.4	27.6
111 (39-25)	94.83	23.86	118.69	642	500	22.2	4.3	26.5
1V (24 and-below)	88.35	16.65	105.0	307	307	13.1	2.5	15.6

Thus, when the food economy is completely freed from the control of public distribution system, the first two categories constituting 47% of population and included in the highest income group and the agriculturists class will consume 55% of total food grains produced (under production scale of 1971-72), while the next 28% of population demonstrated by the third income stream will have consumption of another 28% of production. The rest of 25% of our population, therefore, will have to remain content with the availability of only 17% of the food grains produced. Thus, in the year 1971-72, as many as 140 million people will have only 15.6 million tonnes of food grains to be shared, which will hardly give an average rate of only 307 grams per adult per day. Obviously, if our objective was to provide the vulnerable section the minimum nutritionally required food grains in 1971-72 (i.e. at the rate of 535 grams per adult per day), the gross production has fallen short by 4.4 million tonnes.

It is interesting to note that an additional injection of food grains equal to this amount into the supply market could not have solved the problem of low income groups through the free market mechanism. Had it been so easy a matter we would have the capacity to augment the supply position by much more than the amount of shortfall out of the imports of 2·1 million tonnes and government held stock of 7.9 million tonnes in 1971-72. This is because the pattern of consumption in the low income economy like ours is bound to develop pockets of shortages and the traders get an open opportunity to hold commodities and create an artificial scarcity resulting in the acceleration of food grains prices far beyond the capacity of the vulnerable society.

If, therefore, the free market mechanism is to take care of food grains distribution without subjecting the low income groups to abnormal prices, production has to be sufficient to meet the requirment of all sections of the community at a rate of consumption maintained by the top expenditure classes. One condition to attain this objective is to hold the price line for non-food commodities lest diversion of productive resources takes place.

Accordingly, we can prepare a demand schedule for food grains market which will show how the production is faring from effective demand under the free market mechainsm.

Table 5

Years	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
Net production (In million tonnes)	83.6	83.2	87.1	94.3	92.8	83.0	93.6	91.0
Effective demand (In million tonnes)	101.4	103.6	105.3	108.1	110.4	112.7	115.1	117.5
Net shortfall of production (do)	17.8	20.4	18.7	13.8	18.6	29.7	21.5	28.5
Imports of food grains (do)	8.7	5.7	3.9	3.6	2.1	0.4	4.0	4.9
Net food deficits (do)	9.1	14.7	14.8	10.2	16.5	29.3	16.5	23.6

Though, therefore, from the national average point of view, the problem of scarcity is not so apparent and, on the contrary, the per capita availability of food grains is found to be even in excess of nutritional requirments by an average rate of 9.4% per year in the period from 1967-68 to 1974-75, our penetrating analysis has shown that given the unrestricted operation of demand and supply in food grains market, fed from the prevailing trend of production, about 25% of our population remain hungry at a consumption level which is 43% below the nutritional requirement. The above table shows that the net deficit so occured has ranged from 10.2 million tonnes in 1970-71 to 23.6 million tonnes in 1974-75. The only way, therefore, to meet the immediate necessity is to fill the vacuum by restricting consumption level of the top expenditure classes and to divert the released food grains to the vulnerable section of society. This can be made possible only through a very strong public distribution system which is still far from the one that we have in India today.

Conclusion

The problem has to be tackled, obviously, both from the short run and the long run points of view. For some years to come production of food grains will lag behind demand and the only alternative is to continue with the stop-gap arrangement of public distribution system. The partial price control through the distribution system should ensure availability of the basic minimum quantity of food grains to the vulnerable section of consumers. But the system through which subsidised food grains are distributed to the public should be strong enough to counteract the evil attendants of the simultaneously run open market. The open market for food grains is still too wide and absorbs about 75% of the marketed surplus. This provides an opportunity for the non-vulnerable section whose price elasticity of demand is almost nil to purchase at the open market prices, however high it may be, the amount by which availability from public distribution falls short of their 'extra-nutritional' requirement. The private traders take advantage of the situation and might create and artificial scarcity. Moreover, the system of dual pricing should mean lower prices for the vulnerable section to obtain basic minimum quantity through public distribution system and higher prices for the rest of the community in the open market.

If the public distribution is to meet the minimum requirement of food grains of the low-income groups, our conservative estimate will reveal that 21.2 milion tonnes should have been earmarked exclusively for the purpose in 1974-75, but the corresponding availability has hardly worked out at 10 million tonnes. To meet, therefore, the basic need of the poor masses while maintaining the existing rate of food grains distribution to the rest of the community, the organisational capacity of the present public distribution system has to be geared up more than doubly and that the feasibility of it is pre-conditioned by a minimum of annual food grains procurement of 25% of the gross production does only go without saying.

The lasting solution, however, needs a considerable time gap and leads us to a two-way task of confronting the problem of food grains, viz., to push up the aggregate supply and to pull down the aggregate demand. In the way of achieving a rational distribution of food grains in the hands of free market mechanism, there are at work a number of of centrifugal forces like hoarding, blackmarketing, lack in production incentive, etc. from the supply side and the increased volume of currency, inequal distribution of income, high income elasticity of demand, the growing millions in population stream and the like from the side of demand. The development of pockets of shortages and the institutions of hoarding and blackmarketing move in a vicious circle making it unable to identify the causes and the effects. The hoarders and blackmarketers exploit the scarcity situation, often engineered by themselves.

Only increased production of food grains will make the evil forces inactive. From the point of view of demand, a proper population policy is the most important of all. In the words of Rajkrishna, "Taking a long term view, just as an increase in the growth of output is the sine qua non of food prices distribution on the supply side, a population control policy and a policy of reducing the growth rate of money supply are the sine qua non of stabilisation on the demand side." While advocating a devotion of serious attention to the necessity of reduction in the inequality of income in order that the lot of the vulnerable section is improved, we, however, opine that the present growth rate of money supply does not pose a serious threat as the Indian economy of recent years has demonstrated a weak relation between increased money supply and the rise in prices. While reducction in the income elasticity of demand for food grains can be effected by raising the level of living standard, which is a long term problem, enhancement of the cross elasticity of demand among various food items will need change in the food habit of the people. The operation of free market mechanism in food economy presupposes self-sufficiency in food grains—not in the sense of nutritional requirement, but in accordance with the food habit of the Indians. To do this, we have to increase the food grains production by 20% of the production level of 1974-75 on the one hand, and to equate the growth rate of population with death rate, i.e. to aim at a more or less static population, on the other.

Monetary Policy in India : The Role of R. B. I.—I

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Monetry Policy has assumed a great significance in relation to the process of economic development. It has been accepted that monetary policy is an integral part of an overall economic policy which a country pursues to regulate and direct economic activities to achieve the objective of economic development with stability. During the period after the Second World War, economic planning has become one of the features of development efforts in different countries. If economic planning is to be fruitful in developing economies it must be associated with relative monetary stability. We can achieve monetary stability only through monetary discipline, hard work and more production of goods and services. It also implies reduction in budgetary deficits, progressively downward adjustment of taxation and relative stability of prices.

Monetary policy is concerned directly with the regulation of supply of money and credit and indirectly with costs, prices and allocation of resources. In a developed economy, monetary policy has to balance the rates of growth of real output and monetary expansion. But in a developing economy, the monetary policy has to shift emphasis from contra-cyclical control to development with stability, Monetary policy operates through *five* inter-related factors : the availability of credit, the volume of money, the cost of borrowing, the prices of capital assets, and the general liquidity of economy. One of the fundamental tasks of monetary authorities in the growth context remains the creation of conditions for the effective mobilisation of the supply of actual and potential savings through the promotion of financial assets on the one hand and on the other the effective investment of these resources through the adaption of the credit structure to subserve the needs of development.

Economic growth is primarily a real phenomenon and is naturally dependent on real factors. Money does not purchase growth but can facilitate growth process. A proper monetary policy is not a *sufficient* but a *necessary* condition of economic growth. Economic development is a continuing process and, therefore, no country could regard itself as having reached the peak of its development efforts. Monetary policy in relation to development should generate an atmosphere in which savings and investment increase and this is possible only when inflation is regulated. There is a general consensus of opinion among economists that a sound monetary policy is an important prerequisite of a comprehensive programme of economic development. In spite of its limitation, the monetary policy has a crucial role to play in the strategy of planned economic development. The *raison d'etre* of planned economy is the fullest mobilisation of the available resources and their allocation so as to secure optimum results.

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Objectives of Monetary Policy

In order to facilitate development, the monetary policy is expected to achieve different objectives consistent with that of the economic policy. The following will be the objectives of monetary policy in developing countries like India.

1. Promotion and mobilisation of savings.
2. Promotion of monetisation and monetary integration of the economy.
3. Provision of credit for expanding trade, commerce and industry and other productive activities.
4. Supporting planning authorities in controlling investible resources and maintenance of stability of relative prices.
5. Maintenance of internal and external stability of prices and of monetary unit.
6. Economic growth and high level of employment.

In a developing economy, the objective of economic growth may conflict with that of price stability. In order of facilitate growth, the prices may rise, which may reach undesirable heights or external accounts may not balance. In fact, price stability is rarely associated with sustained economic growth. To some extent price rise will have to be tolerated.

The official monetary policy continues to be one of 'controlled expansion' operated with the objective of stimulating economic growth and curbing inflationary trends in the economy. The monetary policy is designed to,moderate the inflationary potential resulting from credit expansion by means of general and selective restraints, without denying adequate supply to essential lines of activity. In a policy of controlled expansion, the expansion is at least as important as the control ; in an economy whose credit needs are growing and where investment is being undertaken within the cofines of an overall Plan, it is clearly important that the regulation of credit expansion would be linked both dimensionally and directionally with the overall requirements of the plan.

The Bernstein Mission in 1954 defined and emphasised monetary policy as assisting economic development and stability. The I.M.F. Mission (headed by E.M. Bernstein) supported the developments which resulted in *appropriate* or *proper* money supply but left to the monetary authorities to deal with the difficulties as there is no reliable and independent test of *appropriateness*. The Bernstein Mission welcomes functional rise in prices but says that an inflationary rise in prices must be avoided, Apart from this report there has been no detailed and independent enquiry to lay down the basis of short-term and long-term monetary policy. What we require today is the adoption of a flexible and an appropriately articulated monetary policy suited to the wider national context.

Monetary Policy and the Plan

During the period of planning since 1951 there has been a phenomenal rise in bank resourses, extension of banking and diversification and intensification of banks and reorientation of the monetary policy of the Reserve Bank of India. The basic trends during the period are characterised by the continued increase in money supply and prices. Yet, there are significant deficiencies in the flow of credit judged from the point of view of plan requirements.

During the First Plan period, the policy was to combat temporary price changes. During 1951-56, there had been an increase in money supply and national income while prices were actually declined. The only significant change was in the first year of the Plans, when the Bank Rate was put up by ½ per cent and the Reserve Bank refrained from buying the Government Securities to meet seasonal needs of banks. This was followed by the Bill Market Scheme in early 1952.

It was during the Second Plan the Reserve Bank had to initiate some change in monetary policy to deal with the inflationary pressures. The policy came to be known as one of 'controlled expansion' to facilitate development with stability. During the Plan, monetary resources and national income increased by 41 and 22 per cent respectively, while prices rose by 35 per cent. Money supply increased mainly due to the Government borrowing from the banking sector. The Bank Rate was rasied by ½ per cent in May 1957. Selective credit controls have been imposed from 1956 to regulate the overall quantum of credit and/or use of credit. Various directives have been issued to banks to restrain the size of credit expansion. A cautious lending policy was advocated with limits on credit and lending rates. The statutory reserves were raised under the Banking Regulation Act. A quota and slab system was evolved but later a differential rate system was introduced regulate credit. In spite of all these measures, the Reserve Bank did not succeed but created unfavourable atmosphere for the Third Plan.

The Third Plan was thus started in an adverse economic climate. While advocating monetary discipline, the Planning, Commisson said, "Without an adequate fiscal and monetary discipline, other regulatory measures cannot have the desired effect." During the Plan period, monetary resources and national income increased by 58 and 15 per cent respectively while prices rose by 32 per cent. The amount of deficit financing was of the order of Rs. 940 crores.

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(Continued from page 360)

impact of development on cultural changes is insignificant, a higher degree of commercialization of production is on mark, and the predominance of socially backward communities is not a deterrent to progress.

The observation that "the rural economy of East India is "characterized by a high degree of stagnation", and it is "due to the absenc of big farmer-leadership" is difficult to accept as some progress place during 1956-65 through the efforts of the exploited villagers. study asserts that for a dynamic change in the rural economy highly profitable technological innovation is necessary, but nowhere it shows that the economy is prepared to use the innovations, if availabl profitably. By its own admission the Green Revolution is as ye rightly a Rice Revolution and that too is confined to "a few favoure territorial pockets" because of "the existing pattern of land distrib tion with concentration of holdings in the hands of a few farmers." Thus the crux of all the problems is how to break throu the institutional hurdles and adapt the people's mental attitudes. study candidly admits this but does not provide any answer. surveys have thrown up a basket of valuable information for policy- makers and researchers.